

# INVITATION TO BID



Department Of Executive Services  
Finance And Business Operations Division  
**Procurement And Contract Services Section**  
206-684-1681 Tty Relay: 711

Advertised Date: September 22, 2005

ITB Title: DNR Field Instrument Standardization  
ITB Number: ITB 05-017 JAE  
Due Date: October 20, 2005 – 2:00 P.M.

Buyer: Jim Engan, [jim.engan@metrokc.gov](mailto:jim.engan@metrokc.gov), (206) 684-1053  
Or: Alan Terhune, [alan.Terhune@metrokc.gov](mailto:alan.Terhune@metrokc.gov), (206) 684-1067

PRE-BID CONFERENCE: A Pre-Bid Conference will be held Monday October 3, 2005 at the Exchange Bldg, 8<sup>th</sup> Floor, Conference Room A, 821 Second Ave. Seattle, WA 98104-1598 At 10:00 A.M.

Sealed Bids are hereby solicited and will **ONLY** be received by:  
King County Procurement Services Section  
Exchange Building, 8<sup>th</sup> Floor  
821 Second Avenue  
Seattle, WA 98104-1598  
Office Hours: 8:00 a.m. - 5:00 p.m.  
Monday - Friday

## Bidders must complete and sign the form below (Type or Print)

Company Name			
Address		City / State / Postal Code	
Authorized Representative / Title	Signature	Phone	Fax
Company Contact / Title	Email	Phone	Fax
Prompt Payment Discount Terms:		____%-____Days, Net ____	

This Invitation to Bid will be provided in alternative formats such as Braille, large print, audiocassette or computer disk for individuals with disabilities upon request..

# CONTRACT

THIS CONTRACT, made this \_\_\_\_\_ Day of \_\_\_\_\_, 2004 by and between King County, Washington, (hereinafter "County") and \_\_\_\_\_ (hereinafter "Contractor").

WITNESSETH:

WHEREAS, the County has caused Contract documents for:

**Contract No:** \_\_\_\_\_ **Contract Title:** DNR Field Instrument Standardization

**Award of Schedule(s)**

to be prepared for certain Work as described therein; and

WHEREAS, the Contractor has assured the County that it has the specialized expertise and experience necessary to properly Provide the goods and Services in a timely manner and that its Bid includes all of the functions and features required for the goods and Services; and

WHEREAS, the County has accepted the Contractor's offer to provide the goods and Services in accordance with the Contract's terms, Scope of Work and Bid documents;

WHEREAS, by executing this Contract, the Contractor represents that the waiver of the Contractor's immunity under industrial insurance, Title 51 RCW, as set forth in the Contract documents was mutually negotiated by the parties;

NOW THEREFORE, in consideration of the mutual covenants and agreements of the parties herein contained and to be performed, the Contractor hereby agrees to supply the goods and Services at the price and on the terms and conditions herein contained, and to assume and perform all of the covenants and conditions herein required of the Contractor, and the County agrees to pay the Contractor the Contract price Provided herein for the supply of the goods and Services and the performance of the covenants set forth herein.

THE FURTHER TERMS, CONDITIONS AND COVENANTS of the Contract are set forth in the following exhibit parts each of which is attached hereto and by this reference made a part hereof in the following order of precedence; **[1]** Contract Amendments; **[2]** the Contract Document which includes: Cover (Page 1), Exhibit A – Bid Pricing, Exhibit B – Registration, Exhibit D – Contracting Opportunities Program, Definition of Words and Terms, Standard Contractual Terms and Conditions, Specific Contractual Terms and Conditions, Insurance Requirements, Scope of Work, Attachments C) Equal Benefit Worksheet and Declaration Form, D) Personnel Inventory Report, E) Affidavit and Certificate of Compliance, and **[3]** ITB Addenda

**COMPANY NAME:** \_\_\_\_\_

**ACCEPTED BY:** \_\_\_\_\_ **KING COUNTY APPROVED BY:** \_\_\_\_\_

\_\_\_\_\_  
Authorized signature

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
*Name and Title (Print or Type)*

\_\_\_\_\_  
*Name and Title (Print or Type)*

**DATE ACCEPTED:** \_\_\_\_\_

**DATE APPROVED:** \_\_\_\_\_

## EXHIBIT A – BID PRICING

**ITB NO:** ITB 05-017 JAE

**TITLE:** DNR Field Instrument Standardization

**NAME OF BIDDER:**

We acknowledge that **Addenda numbered \_\_\_\_\_ to \_\_\_\_\_** have been delivered to us and have been examined as part of the Contract documents.

We acknowledge that attaching our terms or modifying the ITB terms may result in our bid being rejected.

### BID EVALUATION RULES:

1. Evaluation and award will be by schedule to the low, responsive, responsible Bidder for each schedule.
2. Bidders must bid all items in a schedule but do not need to bid all Schedules.
3. For every item bid, the Bidder must include the current catalog or price list and indicate the range of items and accessories available to the County utilizing the offered multiplier. The pricing contained in the catalog will be available to the County for the entire original two year term of the Contract, after the original two year term the prices will be based on the then current catalog, but multiplier will remain the same for the duration of the Contract.
4. The catalog, price list or price sheet used by the bidder must be in general use (not designed for King County), be periodically updated, offer alternate sizes, configurations, options and associated items.
5. Bidders must provide adequate technical specifications for the items bid so the County can verify that the instruments offered meet or surpass the item's specifications.
6. Manufacturers may bid directly but if they plan to use the services of a local representative please indicate this in the bid.
7. The County will evaluate bids by selecting equivalent items from responsive bids, and then multiplying the catalog prices by the multipliers offered; the County will determine the bid prices.
8. The Bidder must provide a multiplier percentage that when multiplied times the price of the catalog or price list items will result in the contract prices.

Example:

List price of item is \$259.00

List price of an optional/associated item is \$198.00

Multiplier offered is 85%

Contract price of item is  $\$259.00 \times .85 = \$220.15$

Contract price of the optional item is  $\$198.00 \times .85 = \$168.30$

Line Item #, Instrument ID	Identify Manufacture and Catalog, Price List or Price Sheet Containing the Item and send a copy with the bid. Identify range of Items and Options available to the County with the Offered Multiplier.	Multiplier %
Schedule A		Item No. 1
1. FI		
Schedule B		Item No. 2

<b>Line Item #, Instrument ID</b>	<b>Identify Manufacture and Catalog, Price List or Price Sheet Containing the Item and send a copy with the bid. Identify range of Items and Options available to the County with the Offered Multiplier.</b>	<b>Multiplier %</b>
2. LI		
Schedule C		Item No. 3
3. LG		
Schedule D		Item No. 4 & 5
4. IS		
5. IS		
Schedule E		Item No. 6
6. SE		
Schedule F		Item No. 7 & 8
7. TE		
8. TE		
Schedule G		Item No. 9, 10,11 & 12
9. AE/AIT		
10. AE/AIT		
11. AE/AIT		
12. UI/UA		
Schedule H		Item No. 13 & 14
13. AE/AIT		
14. AE/AIT		
Schedule I		Item No. 15
15. AE/AIT		
Schedule J		Item No. 16, 17, 18 & 19
16. LT		
17. PT		
18. PDT		
19. TT		
Schedule K		Item No. 20
20. FE/FIT		
Schedule L		Item No. 21 & 22
21. FE/FIT		
22. FS		
Schedule M		Item No. 23, 24 & 25

<b>Line Item #, Instrument ID</b>	<b>Identify Manufacture and Catalog, Price List or Price Sheet Containing the Item and send a copy with the bid. Identify range of Items and Options available to the County with the Offered Multiplier.</b>	<b>Multiplier %</b>
23. FE/FIT		
24. FE/FIT		
25. FE/FIT		
Schedule N		Item No. 26
26. LT		
Schedule O		Item No. 27
27. LT		
Schedule P		Item No. 28
28. LT		
Schedule Q		Item No. 29 & 30
29. LT		
30. LT		
Schedule R		Item No. 31
31. SIT		
Schedule S		Item No. 32
32. ZT		
Schedule T		Item No. 33
33. FS		
Schedule U		Item No. 34
34. LS		
Schedule V		Item No. 35
35. LS		
Schedule W		Item No. 36, 37 & 38
36. PDI		
37. PI		
38. PI		
Schedule X		Item No. 39, 40, 41, 42, 43 & 44
39. PDS		
40. PS		
41. TS		

<b>Line Item #, Instrument ID</b>	<b>Identify Manufacture and Catalog, Price List or Price Sheet Containing the Item and send a copy with the bid. Identify range of Items and Options available to the County with the Offered Multiplier.</b>	<b>Multiplier %</b>
42. PDS		
43. PDS		
44. PS		
Schedule Y		Item No. 45
45. VS		
Schedule Z		Item No. 46
46. YVC		
Schedule AA		Item No. 47
47. XI		
Schedule AB		Item No. 48
48. UR		
Schedule AC		Item No. 49
49. KI		

## EXHIBIT B – REGISTRATION

### Internal Revenue Service (IRS) Reporting Requirements:

**Check one:**

- ☐ Corporation      ☐ Partnership      ☐ Sole Proprietor  
☐ Other (please specify) \_\_\_\_\_

**Identify:**

State of Incorporation: \_\_\_\_\_ Dun and Bradstreet Number: \_\_\_\_\_  
(Required for all federally funded procurements)

**Provide one:**

Federal Tax Number: \_\_\_\_\_ Social Security Number: \_\_\_\_\_

What is the official name registered with the IRS for this number? \_\_\_\_\_

**Identify:**

UBI Number: \_\_\_\_\_ Business License Number: \_\_\_\_\_

### Prompt payment discount offered:

Percentage: \_\_\_\_\_ Days: \_\_\_\_\_ Standard payment is net 30 days. Evaluation Will be at the discounted prices if the time for the discount is not less than 20 days.

### Bidder Identification:

- ☐ Check if firm submitting Bid is a DBE certified by Washington State Office of Minority and Women's Business Enterprises.  
☐ Check here if the firm submitting this bid is a King County certified Small Economically Disadvantaged

## EXHIBIT D – CONTRACTING OPPORTUNITIES PROGRAM

The King County Contracting Opportunities Program is a public contracting assistance program that is being implemented on a 1 year pilot basis. The purpose of the Program is to maximize the participation of Small Economically Disadvantaged Businesses through the use of a five percent (5%) incentive factor in the award of King County contracts for the purchase of goods and services.

A "Small Economically Disadvantaged Business" (SEDB) means that a business and the person or persons who own and control it are in a financial condition which puts the business at a substantial disadvantage in attempting to compete for public contracts. The relevant financial condition for eligibility under the Program is based on a dollar ceiling for standard business classifications that is set at fifty percent (50%) of the Federal Small Business Administration (SBA) and Owners' Personal Net Worth less than \$750K dollars.

A "Certified Firm" means a business that has applied for participation in King County's Contracting Opportunities Program, and has been certified as an SEDB by the King County Business Development and Contract Compliance (BDCC) office. Information about becoming a Certified Firm, as well as a list of Certified Firms, may be obtained by contacting the BDCC office at (206) 205-0700.

### Application of the 5% Incentive Factor and Contract Award:

1. This contract Will be awarded to the lowest responsive, responsible bidder; provided, however, that if the bid price of a responsive, responsible SEDB is within five percent (5%) of the bid price of the lowest responsive, responsible bidder, and that bidder is not a SEDB, then the contract Shall be awarded to the low SEDB bidder.
2. All bidders must complete the information required in Exhibit B, Registration, Bidder Identification, for this Invitation To Bid.
3. ☐ Check if firm submitting Bid is a Small Economically Disadvantaged Business Enterprise certified by King County that Will perform the entire contract unassisted.

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**Name of Certified Business**

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**Certification Number**

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**Owner's Signature**

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**Contact Person and Phone Number**

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## DEFINITION OF WORDS AND TERMS

Words and terms shall be given their ordinary and usual meanings. Where used in the Contract documents, the following words and terms shall have the meanings indicated. The meanings shall be applicable to the singular, plural, masculine, feminine and neuter of the words and terms.

Acceptance or Accepted: Written documentation of the County's determination that the Contractor's Work has been completed in accordance with the Contract.

Addendum/Addenda: Written additions, deletions, clarification, interpretations, modifications or corrections to the solicitation documents issued by the County during the Solicitation period and prior to contract award.

Administrative Change: Documentation provided by County to Contractor, which reflects internal King County procedures not affecting the Contract terms or Scope of Work.

Bidder: Individual, association, partnership, firm, company, corporation or a combination thereof, including joint ventures, submitting a bid to perform the Work.

Buyer: Individual designated by the County to conduct the Contract solicitation process, draft and negotiate contracts, resolve contractual issues and support the Project Manager during Contract performance.

Contract Amendment: A written change to the Contract modifying, deleting or adding to the terms or scope of work, signed by both parties, with or without notice to the sureties.

Contract or Contract Documents: The writings and drawings embodying the legally binding obligations between the County and the Contractor for completion of the Work under the Contract as set forth on Page 2 of this document.

Contractor: The individual, association, partnership, firm, company, corporation, or combination thereof, including joint ventures, contracting with the County for the performance of Services or Work under the Contract.

Day: Calendar Day.

Documentation: Technical publications relating to the use of the Work to be Provided by Contractor under this Contract, such as reference, user, installation, systems administration and technical guides, delivered by the Contractor to the County.

Person: Includes individuals, associations, firms, companies, corporations, partnerships, and joint ventures.

Price Analysis: The process of examining and evaluating a price without evaluating its separate cost elements and proposed profit.

Project Manager: The individual designated by the County to manage the project on a daily basis and who may represent the County for Contract administration. This Contract may be part of a larger County project.

Provide: Furnish without additional charge.

RCW: The Revised Code of Washington.

Reference Documents: Reports, specifications, and drawings that are available to Bidders for information and reference in preparing bids but not as part of this Contract.

Work: Everything to be provided and done for the fulfillment of the Contract and Shall include all Goods and Services specified under this Contract, including Contract Amendments and settlements.

## **SECTION 1 - INSTRUCTIONS TO BIDDERS**

### **1-1 Introduction**

The purpose of this Invitation To Bid is to establish indefinite quantities contracts for the supply of standardized instruments for wastewater treatment facilities including pump stations, existing treatment plants, the new treatment plants and all system upgrades and expansions. The indefinite quantities contracts will be used by the County and/or county construction contractors, their subcontractor(s) and suppliers. The Bidder shall also include all appropriate printed information for the items bid, this will assist the County to determine if the items bid are in compliance with Section 5 "Technical Specifications".

### **1-2 Bid Submission**

Sealed bids shall contain all required attachments and information, be sealed and submitted to the County (hereinafter "County"), Procurement and Contract Services Section, Mailstop EXC-ES-0871, Eighth Floor, Exchange Building, 821 Second Avenue, Seattle, Washington 98104-1598 no later than 2 p.m. Seattle time on Oct.20, 2005.

The Bidder accepts all risks of late delivery of mailed bids or of misdelivery regardless of fault. Bids properly and timely submitted Will be publicly opened.

Bids shall only be accepted from Contractors and joint ventures able to complete the Contract Work. Subcontractors and joint Bidders are not allowed to submit stand alone ITBs.

If a document holder chooses not to submit a bid, the document holder is requested to advise the Buyer by email if they desire to remain listed for the subject of this ITB and stating the reason they could not submit a bid at this time.

Note: This ITB is available on the Web at <http://www.metrokc.gov/procurement> and by choosing the "RFPs, RFQs, ITBs" menu tab, then click the "New" menu tab, then click on "Goods & Services", and look for ITB 05-017 JAE. Persons who copy the document from the Internet shall inform the Buyer that they have received the document. If they fail to inform the Buyer, they will not be notified of Addenda as issued.

### **1-3 Cancellation of ITB or Postponement of Bid Opening**

The County reserves the right to cancel the ITB at any time or change the date and time for submitting bids by announcing same prior to the date and time established for bid submittal.

### **1-4 ITB Signature**

Each ITB submission shall include an Invitation to Bid cover page signed by an authorized representative of the Bidder.

### **1-5 Addenda**

Each bid shall include acknowledgment of receipt and review of all "**Addenda**" issued during the bid process in Exhibit A – Bid Pricing.

At any time, if the County changes, revises, deletes, clarifies, increases, or otherwise modifies the ITB, the County shall issue a written Addendum to the ITB.

### **1-6 Questions and Interpretation of the ITB**

No oral interpretations as to the meaning of the ITB shall be made to any Bidder. Questions, requests for interpretation, clarification, additions or deletions to the technical or contractual terms in this ITB shall be e-mailed to the Buyer at the County's Procurement Services Division at the location indicated

in Subsection 1-7 at least ten (10) Days before the date established for submitting bids. Bidders shall not rely upon any oral statements or conversations, with county employees at the pre-bid conference.

Any interpretation deemed necessary by the County shall be in the form of an Addendum to the ITB and when issued shall be delivered as promptly as is practicable to all parties to whom the ITB has been issued. All Addenda shall become part of the ITB and any subsequently awarded Contract. Any changes to the ITB shall follow the Addenda process in Subsection 1-5.

#### **1-7 Inquiries**

Inquiries concerning the procurement process shall be directed to Jim Engan at e-mail address: jim.engan@metrokc.gov or at phone number (206) 684-1053 or Alan Terhune at phone number (206) 684-1067, either may be contacted at FAX number (206) 684-1470 or in writing to the address on the front of this document.

COMMUNICATIONS CONCERNING THIS BID, WITH OTHER THAN THE LISTED BUYERS MAY CAUSE THE BIDDER TO BE DISQUALIFIED.

#### **1-8 Pre-bid Conference**

A pre-bid conference will be held at 10:00 a.m. on October 3, 2005, at Procurement & Contract Services Section, Exchange Building, Eighth Floor, 821 Second Avenue, Seattle, Washington, 98104-1598, in conference room 8A to review the bid requirements and address any questions.

#### **1-9 Alterations to Documents**

Any addition, limitation or provision made with or attached to the Bid may render it non-responsive and/or irregular and be cause for its rejection. Alteration by erasure or interlineations must be explained or noted over the signature of the Bidder. No oral, telegraphic, Internet, telephonic or facsimile bids or modifications will be considered.

#### **1-10 Examination of Bid and Contract Documents**

The submission of a bid shall constitute an acknowledgment upon which the County may rely that the Bidder has thoroughly examined and is familiar with the ITB, including any work site identified in the ITB, and has reviewed and inspected all applicable statutes, regulations, ordinances and resolutions addressing or relating to the goods and Services to be Provided hereunder.

The failure or neglect of a Bidder to receive or examine such documents, work sites, statutes, regulations, ordinances or resolutions shall in no way relieve the Bidder from any obligations with respect to its bid or to any Contract awarded pursuant to this ITB. No claim for additional compensation shall be allowed which is based upon a lack of knowledge or misunderstanding of this ITB, work sites, statutes, regulations, ordinances or resolutions.

#### **1-11 Modification of Bid or Withdrawal of Bid Prior to Bid Due Date**

At any time before the time and date set for submittal of bids, a Bidder may request to withdraw or modify its bid. Such a request shall be in writing signed by an authorized representative of Bidder as identified on the cover of the ITB. All bid modifications shall be made in writing, executed and submitted in the same form and manner as the original bid.

#### **1-12 Cost of Bid**

The County is not liable for any costs incurred by Bidder in the preparation of bids submitted in response to this ITB.

### 1-13 Bid Withdrawal

Except for claims of error granted by the County, no Bidder may withdraw a bid after the date and time established for submitting bids, or before the award and execution of a Contract pursuant to this ITB, unless the award is delayed for a period exceeding the period for bid effectiveness. The County reserves the right to request a Bidder or Bidders to grant an extension of such effective period.

Requests to withdraw a bid due to error must be submitted in writing along with supporting evidence for such claim including cost breakdown sheets. Requests must be delivered to the County within forty-eight hours after the opening of Bids. The County reserves the right to require the submittal of other bid records or information, as the County may deem necessary to evaluate the request. Any review by the County of a bid and/or any review of such a claim of error, including supporting evidence, creates no duty or liability on the County to discover any other Bid error or mistake, and the sole liability for any Bid error or mistake rests with the Bidder.

### 1-14 Bid Requirements

The bid Will contain the completed:

- [Cover Page](#)
- [Contract](#)
- [Exhibit A](#) - Bid Pricing
- [Exhibit B](#) - Registration
- [Exhibit D](#) - Contracting Opportunities Program

The above completed pages and all required additional documents Shall be placed in a sealed envelope with the enclosed sticker filled out and attached to the outside of the envelope.

### 1-15 Forms Required Before Contract Signing

The Bidder shall submit within five (5) Business Days of receipt of written request from the County the following documents and other conditions precedent to formation of the Contract.

Failure by the Bidder to submit required documents shall result in rejection of the bid.

- [Attachment C](#) - Equal Benefit Worksheet and Declaration Form  
[http://www.metrokc.gov/procurement/documents/U\\_042\\_EB\\_Worksheet\\_Declaration.doc](http://www.metrokc.gov/procurement/documents/U_042_EB_Worksheet_Declaration.doc)
- [Attachment D](#) - Personnel Inventory Report – Complete, sign and submit.  
[http://www.metrokc.gov/procurement/documents/IBIS\\_Attachments/ATTACHMENTD\\_Personnel\\_Inventory.doc](http://www.metrokc.gov/procurement/documents/IBIS_Attachments/ATTACHMENTD_Personnel_Inventory.doc)
- [Attachment E](#) - Affidavit and Certificate of Compliance Regarding Equal Employment Opportunity – Complete, sign and submit.  
[http://www.metrokc.gov/procurement/documents/IBIS\\_Attachments/ATTACHMENTE\\_CertificateOfCompliance.doc](http://www.metrokc.gov/procurement/documents/IBIS_Attachments/ATTACHMENTE_CertificateOfCompliance.doc)

Please contact the King County Procurement & Contracts Services Section at (206) 684-1681, or the buyer listed in this document to obtain a copy of these forms and/or have questions regarding their completion. Copies of the forms can also be viewed/downloaded by clicking on the hyperlinks above or visiting [http://www.metrokc.gov/procurement/resources/forms\\_gs.aspx](http://www.metrokc.gov/procurement/resources/forms_gs.aspx)

### 1-16 Collusion

By signing this bid, the Bidder declares that they have not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with the work included in this ITB.

If the County determines that collusion has occurred among Bidders, none of the Bids from the participants in such collusion shall be considered. The County's determination shall be final.

#### **1-17 Bid Price, Taxes and Effective Date**

- A. The Bid price shall include everything necessary for the prosecution and completion of the Contract including but not limited to furnishing all Work including: materials, equipment, supplies, tools, plant and other facilities and all management, supervision, labor and service, except as may be Provided otherwise in this ITB.
- B. Bid Prices shall include all freight charges, FOB to the designated delivery points.
- C. Taxes: Sales/use taxes and Federal excise taxes shall not be included in the Bid price. The County shall pay any Washington State sales/use taxes applicable to the Contract price or tender an appropriate amount to the Contractor for payment to Washington State. The County is exempt from Federal excise taxes. All other government taxes, duties, fees, licenses, permits, royalties, assessments and charges shall be included in the bid price.
- D. In the event of a discrepancy between the unit price and the extended amount for a bid item, the unit price will govern.
- E. The bid shall remain in effect for 90 Days after the bid close date.

#### **1-18 Protest Procedures**

- A. Form of Protest:

In order to be considered, a Protest shall be in writing, addressed to the Manager of the King County Procurement and Contract Services Section of the Department of Executive Services, and include:

  - 1. The name, address, and phone number of the Bidder protesting, or the authorized representative of the Bidder;
  - 2. The ITB Number and Title under which the protest is submitted;
  - 3. A detailed description of the specific grounds for protest and any supporting documentation. It is the responsibility of the protesting Bidder to supplement its protest with any subsequently discovered documents prior to the Manager's decision; and
  - 4. The specific ruling or relief requested.
- B. Who May Protest.
  - 1. Protests prior to bid due date based on Scope of Work or other terms in the ITB document -- any prospective Bidder.
  - 2. Protests following bid due date -- any Bidder submitting a bid on time.
- C. Time to Protest.

Protests based on Scope of Work or other terms in the ITB document shall be received by the County no later than ten (10) Days prior to the date established for submittal of Bids. The County shall receive protests based on other circumstances within five (5) Days after the protesting Bidder knows or should have known of the facts and circumstances upon which the Protest is based. In no event shall a Protest be considered if all Bids are rejected or after award of the Contract.

D. Determination of Protest.

Upon receipt of a timely written Protest, the Procurement Manager shall investigate the Protest and shall respond in writing to the Protest prior to the award of Contract. Except as Provided below, the decision of the Procurement Manager shall be final.

E. Reconsideration of Manager's Decision.

A financially interested Bidder or Contractor may request that a Manager's adverse decision be reviewed by the Director, of the King County Finance and Business Operations Division ("Director") on a reconsideration basis only. The only justifications for reconsideration are (1) new data, relevant to the underlying grounds for protest and unavailable at the time of the Protest to the Manager; or (2) the Manager made an Error of law or regulation. The following procedures shall be followed for a reconsideration of the Manager's decision:

1. Form of Request for Reconsideration. In order to be considered, a Request for Reconsideration shall be filed with the Director in writing and include:
  - a. Name, address, and telephone number of the Person protesting or their authorized representative;
  - b. A copy of the written decision of the Manager; and
  - c. Justification for reconsideration by the Director, including all pertinent facts and law on which the Bidder is relying.
2. Time for filing Request for Reconsideration. The financially interested Bidder shall file the Request for Reconsideration no later than five (5) Days of receiving the Procurement Manager's decision.
3. Review of Manager's Decision. Upon receipt of a Request for Reconsideration, the Director or his/her designee shall review 1) the information submitted to and reviewed by the Manager and 2) the decision of the Manager, and shall thereafter issue a final determination regarding the Request for Reconsideration. No other information shall be reviewed unless the basis for the request for reconsideration is new data.

F. Failure to Comply

Failure to comply with the procedures set forth herein may render a Protest untimely or inadequate and may result in rejection thereof by the County.

## **1-19 Supported Employment Program**

The County encourages the creation of supported employment programs for developmentally and/or severely disabled individuals. The County itself has such a program and is actively seeking to do business with those Contractors and Consultants that share this employment approach. If your firm has such a program, or intends to develop such a program during the life of this Contract, please submit Documentation supporting this claim with your bid. If you have questions, or need additional information, please contact the Community and Human Services Division, Developmental Disabilities Division, 206-296-5268.

## SECTION 2 - BID EVALUATION & CONTRACT AWARD

### 2-1 Evaluation of Bids

Bids will be evaluated by the County to determine which bid, if any, should be accepted in the best interest of the County. When [Exhibit D](#), "King County Contracting Opportunities Program", is incorporated in the ITB, the determination of lowest responsive, responsible bidder Will include the application of the five (5) percent incentive factor for Small Economically Disadvantaged Businesses (SEDB).

#### A. Responsiveness

The County Will consider all the material submitted by the Bidder to determine whether the Bidder's offering is in compliance with the terms and conditions set forth in this ITB.

#### B. Responsibility

1. The County shall consider all the material submitted by the Bidder, and other evidence it may obtain otherwise, to determine whether the Bidder is capable of and has a history of successfully completing contracts of this type. This may include requiring the Bidder to Provide references from customers who have been Provided the same or equivalent Goods or Services. References shall include the names and addresses of the parties to whom such goods or Services were Provided and the name and phone number of contact Persons with such parties.
2. The following elements shall be given consideration by the County in determining whether a Bidder is responsible:
  - a. The ability, capacity and skill of the Bidder to perform the Contract or Provide the service required;
  - b. The character, integrity, reputation, judgment and efficiency of the Bidder;
  - c. Whether the Bidder has the financial resources and experience to perform the Contract properly and within the times specified;
  - d. The quality and timeliness of performance by the Bidder on previous contracts with the County and with other third parties, including, but, not limited to, the relative costs, burdens, time and effort necessarily expended by the County and such governments and agencies in securing satisfactory performance and resolving claims;
  - e. The previous and existing compliance by the Bidder with laws relating to public contracts or Services, including, but not limited to, Disadvantaged Business Enterprise (DBE) and equal employment opportunity requirements;
  - f. The history of the Bidder in filing claims and litigation on prior projects involving the County or third parties; and
  - g. Such other information having a bearing on the decision to award the Contract.

#### C. Financial Resources

If requested by the County after Bid opening, the Bidder Shall submit proof of adequate financial resources which would be available to the Bidder for the prosecution and completion of the Work as required. When requested, the required financial information Shall include:

1. Audited financial statements such as balance sheets, five (5) successive statements of income, statements of cash flow and stockholders' equity, for each of the most recently completed fiscal years, including notes to financial statements, independent accountants' reports and annual reports to stockholders;

2. Documentation of an open line of credit or other arrangement with an established bank under which adequate financing would be available for prosecution and completion of the Work called for hereunder;
  3. Certification by the principal financial officer of or an independent accountant for the Bidder, stating that the Bidder has adequate financial resources for the prosecution and completion of the Work called for hereunder;
  4. The names, addresses and telephone numbers of at least one contact in the company's principal financial or banking organization and its independent auditor; and
  5. The Bidder Shall supply when requested written authorization for the County to contact the bank and the independent accountant, and written authorization requiring the bank and independent accountant to Provide the information to the County regarding financial capability.
- D. Financial Reporting
- The Bidder Shall Provide a current copy of its Dun and Bradstreet report if requested by the County.
- E. King County Contracting Opportunities Program
1. The King County Contracting Opportunities Program is a public contracting assistance program that is being implemented on a one (1) year pilot basis. The purpose of the Program is to maximize the participation of Small Economically Disadvantaged Businesses through the use of a five percent (5%) incentive factor in the award of King County contracts for the purchase of goods and services.
  2. A "Small Economically Disadvantaged Business: (SEDB) means that a business and the person or persons who own and control it are in a financial condition which puts the business at a substantial disadvantage in attempting to compete for public contracts. The relevant financial condition for eligibility under the Program is based on a dollar ceiling for standard business classification that is set at fifty percent (50%) of the Federal Small Business Administration (SBA) and Owner's Personal Net Worth less than \$750K dollars.
  3. A "Certified Firm" means a business that has applied for participation in King County's Contracting Opportunities Program, and has been certified as an SEDB by the King County Business Development and Contract Compliance (BDCC) office. Information about becoming a Certified Firm, as well as a list of Certified Firms, may be obtained by contracting the BDCC office at (206) 205-0700.

## **2-2 Rejection of Bids**

- A. The County reserves the right to reject any bid for any reason including, but not limited to, the following:
1. Any bid which: 1) contains any omission, erasure or irregularity; 2) is incomplete, obscure, irregular or lacking necessary detail and specificity; 3) has any qualification, addition, limitation or provision attached to the bid; 4) omits a price where pricing is required; 5) has unbalanced pricing in the opinion of the County, 5) is not approved as being compliant with the requirements for equal employment opportunity or Domestic Partner Benefits;
  2. Any bid from Bidders who: in the sole judgment of the County) lack the qualifications or responsibility necessary to perform the Work; 2) fails or neglects to complete and submit any qualifications information within the time specified by the County, 3) is not registered or licensed as may be required by the laws of the state of Washington or local government agencies;

- B. In consideration for the County's review and evaluation of its bid, the Bidder waives and releases any claims against the County arising from any rejection of any or all bids, including any claim for costs incurred by Bidders in the preparation and presentation of bids submitted in response to this ITB. In addition, Bidders waive the costs of providing additional information requested or cost of modifications made to its internal structure, systems or organizations.
- C. The County reserves the right to waive informalities and irregularities in bids.
- D. The County Shall find non-responsive and reject any bid which does not comply with the DBE requirements under this ITB, if applicable.

### **2-3 Procedures When Only One Bid is Received**

If the County receives a single responsive, responsible bid, the County Shall have the right, in its sole discretion, to extend the bid acceptance period and may conduct a price or cost analysis on such bid. The Bidder Shall promptly Provide all cost or pricing data, documentation and explanation requested by the County to assist in such analysis. By conducting such analysis, the County shall not be obligated to accept the single bid; the County reserves the right to reject such bid or any portion thereof.

### **2-4 Public Disclosure of Bids**

This procurement is subject to the Washington Public Disclosure Act, RCW 42.17.250 et seq. Bids submitted under this ITB shall be considered public documents unless the documents are exempt under the public disclosure laws. After the selection process has been concluded and a contract has been signed by both parties bids shall be available for inspection and copying by the public

If a Bidder considers any portion of its bid to be protected under the law, the Bidder shall clearly identify each such portion with words such as "CONFIDENTIAL," "PROPRIETARY" or "BUSINESS SECRET." If the County determines that the material is not exempt from public disclosure law, the County shall notify the Bidder of the request and allow the Bidder fifteen (15) Days to take whatever action it deems necessary to protect its interests. If the Bidder does not take such action within said period, the County shall release the portions of the bid deemed subject to disclosure. By submitting a bid, the Bidder assents to the procedure outlined in this subsection and shall have no claim against the County on account of actions taken under such procedure.

### **2-5 Contract Award**

Contract award, if any, shall be made by the County to the low, responsive, responsible Bidder. The County shall have no obligations until a Contract is signed between the Bidder and the County. The County reserves the right to award one or more contracts as it determines to be in its best interest.

## **SECTION 3 - STANDARD CONTRACTUAL TERMS & CONDITIONS**

### **3-1 Administration**

This Contract is between the County and the Contractor who shall be responsible for providing the Work described herein. The County is not party to defining the division of Work between the Contractor and its Subcontractors, if any, and the Scope of Work has not been written with this intent. The Contractor represents that it has or shall obtain all personnel, materials and equipment required to perform Work hereunder.

The Contractor's performance under this Contract may be monitored and reviewed by a Project Manager appointed by the County. Reports and data required to be Provided by the Contractor shall be delivered to the Project Manager. Questions by the Contractor regarding interpretation of the terms, provisions and requirements of this Contract shall be addressed to the Buyer or Project Manager for response.

### **3-2 Contract Changes**

No oral order or conduct by the County shall constitute a Contract change. Both parties shall agree to contract changes in writing.

If any Contract change causes an increase or decrease in the cost of, or the time required for performance of any part of the Work under this Contract, an equitable adjustment in the Contract price, the project schedule, or both shall be made and the Contract and all related purchase orders(s) modified and agreed to in writing by both parties. Every contract change may require a Cost or Price Analysis to determine the reasonableness of the proposed adjustments to Contract price or schedule. Contract changes do not require notice to sureties by County.

### **3-3 Cost or Price Analysis**

Cost or Price Analysis may be required by the County for the evaluation of contract changes, terminations, revisions to contract requirements or other circumstances as determined by the County.

### **3-4 Termination for Convenience/Default/Non-Appropriation**

#### **A. Termination for Convenience**

The County for its convenience may terminate this Contract, in whole or in part, at any time by written notice sent certified mail, return receipt requested, to the Contractor. After receipt of a Notice of Termination ("Notice"), and except as directed by the County, the Contractor shall immediately stop Work as directed in the Notice, and comply with all other requirements in the Notice. The Contractor shall be paid its costs, including necessary and reasonable Contract close-out costs and profit on that portion of the Work satisfactorily performed up to the date of termination as specified in the notice. The Contractor shall promptly submit its request for the termination payment, together with detailed supporting documentation. If the Contractor has any property in its possession belonging to the County, the Contractor shall account for the same and dispose of it in the manner the County directs. All termination payment requests may be subject to Cost or Price Analysis to determine reasonableness and compliance with the Contract, applicable laws and regulations.

#### **B. Termination for Default**

If the Contractor does not deliver Work in accordance with the Contract, or the Contractor fails to perform in the manner called for in the Contract, or if the Contractor fails to comply with any material provisions of the Contract, the County may terminate this Contract, in whole or in part, for default as follows:

1. A Notice to Cure shall be served on the Contractor by certified mail (return receipt requested) or delivery service capable of providing a receipt. The Contractor shall have ten (10) Days to cure the default or provide the County with a detailed written plan, which indicates the time and methods needed to bring the Work into compliance and cure the default.
2. If the Contractor has not cured the default or the plan to cure the default is not acceptable to the County, the County may terminate the Contract Termination shall occur by serving a Notice of Termination by certified mail (return receipt requested) or delivery service capable of providing a receipt on the Contractor setting forth the manner in which the Contractor is in default and the effective date of termination;
3. The Contractor shall only be paid for Work delivered and Accepted, or Work performed in accordance with the manner of performance set forth in the Contract less any damages to the County caused by or arising from such default. All termination payment requests are subject to Cost or Price Analysis to verify compliance with the Contract, applicable laws and regulations.
4. The termination of this Contract shall in no way relieve the Contractor from any of its obligations under this Contract nor limit the rights and remedies of the County hereunder in any manner.

**C. Termination for Non-Appropriation**

If expected or actual funding is withdrawn, reduced or limited in any way prior to the termination date set forth in this Contract or in any amendment hereto, the County may, upon written notice to the Contractor, terminate this Contract in whole or in part.

In accordance with King County Code 4.04.040B.6, payment shall not exceed the appropriation for the year in which termination is effected. If the Contract is terminated for non-appropriation:

1. The County shall be liable only for payment in accordance with the terms of this Contract for Services rendered prior to the effective date of termination; and,
2. The Contractor shall be released from any obligation under this contract or a related Purchase Order to Provide further Work pursuant to the Contract as are affected by the termination.

Funding under this Contract beyond the current appropriation year is conditional upon the appropriation by the County Council of sufficient funds to support the activities described in this Contract. Should such an appropriation not be approved, the Contract shall terminate at the close of the current appropriation year. The appropriation year ends on December 31 of each year.

### **3-5 Force Majeure**

The term "force majeure" shall include, without limitation by the following enumeration: acts of nature, acts of civil or military authorities, fire, accidents, shutdowns for purpose of emergency repairs, industrial, civil or public disturbances, causing the inability to perform the requirements of this Contract. If any party is rendered unable, wholly or in part, by a force majeure event or any other cause not within such party's control, to perform or comply with any obligation or condition of this Contract, upon giving notice and reasonably full particulars to the other party, such obligation or condition shall be suspended only for the time and to the extent commercially practicable to restore normal operations. In the event the Contractor ceases to be excused pursuant to this provision, then the County shall be entitled to exercise any remedies otherwise provided for in this Contract, including Termination for Default.

### **3-6 Taxes, Licenses, and Certificate Requirements**

This Contract and any of the Work Provided hereunder is contingent and expressly conditioned upon the ability of the Contractor to provide the specified goods or Services consistent with applicable federal, state or local laws and regulations. If, for any reason, the Contractor's required licenses or certificates are terminated, suspended, revoked or in any manner modified from their status at the time this Contract becomes effective, the Contractor shall notify the County immediately of such condition in writing.

The Contractor and subcontractor(s) shall maintain and be liable for all taxes (except sales/use taxes), fees, licenses permits and costs as may be required by applicable federal, state or local laws and regulations as may be required to provide the Work under this Contract.

### **3-7 Assignment**

Neither party shall assign any interest, obligation or benefit under or in this Contract or transfer any interest in the same, whether by assignment or novation, without prior written consent of the other party. If assignment is approved, this Contract shall be binding upon and inure to the benefit of the successors of the assigning party. This provision shall not prevent Contractor from pledging any proceeds from this Contract as security to a lender so long as King County Policy Fin10-1 (AP), paragraph 6.1.3 is followed. An assignment shall be accepted by either party upon the posting of all required bonds, securities and the like by the assignee, and the written agreement by assignee to assume and be responsible for the obligations and liabilities of the Contract, known and unknown, and applicable law.

### **3-8 Indemnification and Hold Harmless**

- A. In providing services under this Contract, the Contractor is an independent contractor, and neither the Contractor nor its officers, agents or employees are employees of the County for any purpose. The Contractor shall be responsible for all federal and/or state tax, industrial insurance and Social Security liability that may result from the performance of and compensation for these services and shall make no claim of career service or civil service rights which may accrue to a County employee under state or local law.

The County assumes no responsibility for the payment of any compensation, wages, benefits, or taxes by or on behalf of the Contractor, its employees and/or others by reason of this Contract. The Contractor shall protect, indemnify, defend and save harmless the County and its officers, agents and employees from and against any and all claims, costs, and/or losses whatsoever occurring or resulting from (1) the Contractor's failure to pay any such compensation, wages, benefits or taxes; and/or (2) the supplying to the Contractor work, services, materials, and/or supplies by Contractor employees or other suppliers in connection with or in support of the performance of this Contract.

- B. The Contractor further agrees that it is financially responsible for and will repay the County all indicated amounts following an audit exception which occurs due to the negligence, intentional act and/or failure for any reason to comply with the terms of this Contract by the Contractor, its officers, employees, agents, and/or representatives. This duty to repay shall not be diminished or extinguished by the prior termination of the Contract pursuant to the Duration of Contract, or the Termination section.
- C. The Contractor shall protect, defend, indemnify, and save harmless the County, [and the State of Washington or US Government (when any funds for this Contract are provided by them )], their officers, employees, and agents from any and all costs, fees (including attorney fees), claims, actions, lawsuits, judgments, awards of damages or liability of any kind, arising out of or in any way resulting from the negligent acts or omissions of the Contractor, its officers, employees, subcontractors of any tier and/or agents. The Contractor agrees that its obligations under this

paragraph extend to any claim, demand, and/or cause of action brought by or on behalf of any of its employees, subcontractors of any tier or agents.

In addition to injuries to persons and damage to property, the term "claims," for purposes of this paragraph C, shall include, but not be limited to, assertions that the use or transfer of any software, book, document, report, film, tape, or sound reproduction or material of any kind, delivered hereunder, constitutes an infringement of any copyright, patent, trademark, trade name, and/or otherwise results in unfair trade practice.

- D. For purposes of paragraphs A and C above, the Contractor, by mutual negotiation, hereby waives, as respects the County only, any immunity that would otherwise be available against such claims under the Industrial Insurance provisions of Title 51 RCW.
- E. In the event the County incurs attorney fees and/or costs in the defense of claims within the scope of paragraphs A and C above, such attorney fees and costs shall be recoverable from the Contractor. In addition King County shall be entitled to recover from the Contractor its attorney fees, and costs incurred to enforce the provisions of this section.
- F. The indemnification, protection, defense and save harmless obligations contained herein shall survive the expiration, abandonment or termination of this Contract.
- G. Nothing contained within this provision shall affect and/or alter the application of any other provision contained within this Contract.

### **3-9 Applicable Law and Forum**

Except as hereinafter specifically provided, this Contract shall be governed by and construed according to the laws of the State of Washington, including, but not limited to, the Uniform Commercial Code, Title 62A RCW. Any claim or suit concerning this Contract may only be filed in either the King County Superior Court or U.S. District for the Western District of Washington, in Seattle.

### **3-10 Conflicts of Interest and Non-Competitive Practices**

#### **A. Conflict of Interest**

By entering into this Contract to perform Work, the Contractor represents that it has no direct or indirect pecuniary or proprietary interest, and that it shall not acquire any interest that conflicts in any manner or degree with the Work required to be performed under this Contract. The Contractor shall not employ any Person or agent having any conflict of interest. In the event that the Contractor or its agents, employees or representatives hereafter acquires such a conflict of interest, it shall immediately disclose such conflict to the County. The County shall require that the Contractor take immediate action to eliminate the conflict up to and including termination for default.

#### **B. Contingent Fees and Gratuities**

By entering into this Contract to perform Work, the Contractor represents that:

1. No Persons except as designated by Contractor shall be employed or retained to solicit or secure this Contract with an agreement or understanding that a commission, percentage, brokerage, or contingent fee would be paid; and
2. No gratuities, in the form of entertainment, gifts or otherwise, were offered or given by the Contractor or any of its agents, employees or representatives, to any official, member or employee of the County or other governmental agency with a view toward securing this Contract or securing favorable treatment with respect to the awarding or amending, or the making of any determination with respect to the performance of this Contract.

### **3-11 Disputes, Claims and Appeals**

The Contractor shall address questions or claims regarding the Contract in writing to the Buyer and Project Manager, within ten (10) Days of the date in which the Contractor knows or should know of the question or claim. No claim by the Contractor shall be allowed if asserted after final payment under this Contract. No claim shall be allowed for any costs incurred more than ten (10) Days before the Contractor gives written notice, as required in this section. The Buyer and Project Manager shall ordinarily respond to the Contractor in writing with a decision, but absent such written response, the question or claim shall be deemed denied upon the tenth (10th) Day following receipt by the Buyer and Project Manager.

In the event the Contractor disagrees with the determination of the Buyer and Project Manager, the Contractor shall, within five (5) Days of the date of such determination, appeal the determination in writing to the Procurement and Contract Services Section Manager. Such written notice of appeal shall include all information necessary to substantiate the appeal. The Procurement and Contract Services Section Manager shall review the appeal and make a determination in writing, which shall be final. Appeal to the Procurement and Contract Services Section Manager shall be a condition precedent alternative dispute resolution or litigation.

Pending final decision of a dispute hereunder, the Contractor shall proceed diligently with the performance of the Contract and in accordance with the direction of the Buyer or Project Manager. Failure to comply precisely with the time deadlines under this subsection as to any claim shall operate as a waiver and release of that claim and an acknowledgment of prejudice to the County.

### **3-12 Mediation and Arbitration**

Nothing in this subsection precludes any party from seeking relief from King County Superior Court or the U.S. District Court for the Western District of Washington, in Seattle. If a dispute arises out of or relates to this Contract, or the breach thereof, and if said dispute cannot be settled through direct discussions, the parties agree to first endeavor to settle the dispute in an amicable manner by mediation. Thereafter, any unresolved controversy or claim arising out of or relating to this Contract, or breach thereof, may be resolved by arbitration, and judgment upon the award rendered by the arbitrator may be entered in either King County Superior Court or the U.S. District Court for the Western District of Washington, in Seattle.

### **3-13 Retention of Records, Audit Access and Proof of Compliance with Contract**

#### **A. Retention of Records**

The Contractor and its subcontractors shall maintain books, records and documents of its performance under this Contract in accordance with generally accepted accounting principles. The Contractor shall retain for six (6) years after the date of final payment under the Contract all financial information, data and records for all Work.

#### **B. Audit Access**

1. Federal, state or County auditors shall have access to Contractor's and its Subcontractors' records for the purpose of inspection, Cost or Price Analysis, audit or other reasonable purposes related to this Contract. Federal, state or County auditors shall have access to records and be able to copy such records during the Contractor's normal business hours. The Contractor shall Provide proper facilities for such access, inspection and copying.
2. Audits may be conducted during or after the Contract period for purposes of evaluating claims by or payments to the Contractor and for any other reason deemed appropriate and necessary by the County. Audits shall be conducted in accordance with generally accepted auditing principles and/or federal, state or County audit procedures, laws or regulations. The Contractor shall fully cooperate with the auditor(s).

3. If an audit is commenced more than sixty (60) Days after the date of final payment for Contract Work, the County shall give reasonable notice to the Contractor of the date on which the audit shall begin.

C. **Proof of Compliance with Contract**

The Contractor shall, upon request, Provide the County with satisfactory documentation of the Contractor's compliance with the Contract.

In addition, the Contractor shall permit the County, and if federally funded, the FTA and the Comptroller General of the United States, or a duly authorized representative, to inspect all Work, materials, payrolls and other data and records involving the Contract.

### **3-14 Other Public Agency Orders**

Other federal, state, county and local entities may utilize the terms and conditions established by this Contract. The County does not accept any responsibility or involvement in the purchase orders or contracts issued by other public agencies.

### **3-15 Recycled Products Policy**

The County promotes the purchase and utilization of recycled material and products where available. Recycled material means material and byproducts, which have been recovered or diverted from solid waste disposal for the purpose of recycling. It does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process. In the event of similar pricing, availability and other factors affecting the solicitation, preference may be given to products containing recycled material.

Ref: KCC 10.14

### **3-16 Conflicts of Interest - Current and Former Employers**

The County seeks to eliminate and avoid actual or perceived conflicts of interest and unethical conduct by current and former County employees in transactions with the County. Consistent with this policy, no current or former County employee may contract with, influence, advocate, advise, or consult with a third party about a County transaction, or assist with the preparation of Proposals submitted to the County while employed by the County or within one (1) year after leaving the County's employment, if he/she participated in determining the Work to be done or process to be followed while a County employee.

All Bidders, vendors or Contractors who anticipate contracting with the County shall identify at the time of offer, such current or former County employees involved in preparation of bids or the anticipated performance of the Work if awarded the Contract. Failure to identify former County employees involved in this transaction may result in the County's denying or terminating this Contract. In addition, after award, the Contractor is responsible for notifying the County's Project Manager of current or former County employees who may become involved in the Contract any time during the term of the Contract

Ref: KCC 3.04.015C; 3.04.035B; 3.04.035D; 3.04.035E; 3.04035H1; 3.04.035H2.

### **3-17 Nondiscrimination and Equal Employment Opportunity**

A. **Nondiscrimination in Employment and Provision of Services.**

During the performance of this Contract, neither the Contractor nor any party subcontracting under the authority of this Contract shall discriminate nor tolerate harassment on the basis of race, color, sex, religion, nationality, creed, marital status, sexual orientation, age, or the presence of any sensory, mental, or physical disability in the employment or application for employment or in the administration or delivery of services or any other benefits under this Contract. King County

Code Chapter 12.16 is incorporated herein by reference, and such requirements shall apply to this Contract.

**B. Nondiscrimination in Subcontracting Practices.**

During the solicitation, award and term of this Contract, the Contractor shall not create barriers to open and fair opportunities to participate in County contracts or to obtain or compete for contracts and subcontracts as sources of supplies, equipment, construction and services. In considering offers from and doing business with subcontractors and suppliers, the Contractor shall not discriminate against any person on the basis of race, color, creed, religion, sex, age, nationality, marital status, sexual orientation or the presence of any mental or physical disability in an otherwise qualified disabled person.

**C. Compliance with Laws and Regulations.**

The Contractor shall comply fully with all applicable federal, state, and local laws, ordinances, executive orders, and regulations that prohibit discrimination.

Unfair Employment Practices. King County Code Chapter 12.18 is incorporated by reference as if fully set forth herein and such requirements apply to this Contract.

**D. Record-keeping Requirements and Site Visits.**

The County may, at any time, visit the project site, Contractors' and Subcontractors' offices to review records related to the solicitation, utilization, and payment to subcontractors and suppliers in compliance with Executive Order 11246 as amended by Executive Order 11375. This provision includes compliance with any other requirements of this Section. The Contractor shall provide all reasonable assistance requested by King County during such visits. The Contractor shall maintain, for six (6) years after completion of all work under this Contract, the following:

1. Records, including written quotes, bids, estimates or proposals submitted to the Contractor by all businesses seeking to participate on this Contract, and any other information necessary to document the actual use of and payment to subcontractors and suppliers in this Contract.
2. The Contractor shall make the foregoing records available to King County for inspection and copying upon request. Any violation of the mandatory requirements of the provisions of this subsection shall be a material breach of contract, which may result in termination of this Contract or such other remedy as the County deems appropriate, including but not limited to damages or withholding payment.

**E. Discrimination In Contracting**

King County Code Chapter 12.17 is incorporated by reference as if fully set forth herein and such requirements apply to this Contract. During the performance of this Contract, neither Contractor nor any party subcontracting under the authority of this Contract shall discriminate or engage in unfair contracting practices prohibited by KCC 12.17.

**3-18 Severability**

Whenever possible, each provision of this Contract shall be interpreted to be effective and valid under applicable law. If any provision is found to be invalid, illegal or unenforceable, then such provision or portion thereof shall be modified to the extent necessary to render it legal, valid and enforceable and have the intent and economic effect as close as possible to the invalid, illegal and unenforceable provision.

### **3-19 Nonwaiver of Breach**

No action or failure to act by the County shall constitute a waiver of any right or duty afforded to the County under the Contract; nor shall any such action or failure to act by the County constitute an approval of, or acquiescence in, any breach hereunder, except as may be specifically stated by the County in writing.

### **3-20 Non-Discrimination in Benefits to employees with Domestic Partners**

King County's Equal Benefits (EB) Ordinance 14823 states that to be eligible for award of contracts at a cost of \$25,000.00 or more, firms must not discriminate in the provisions of employee benefits between employees with spouses, and employees with domestic partners. The successful Contractor, bidder or proposer shall be required to complete a Worksheet and Declaration form. Compliance with Ordinance 14823 is a mandatory condition for execution of a contract. The EB Compliance forms, and Ordinance 14823 are available online at:

[http://www.metrokc.gov/procurement/documents/U\\_042\\_EB\\_Worksheet\\_Declaration.doc](http://www.metrokc.gov/procurement/documents/U_042_EB_Worksheet_Declaration.doc)

## SECTION 4 - SPECIFIC CONTRACTUAL TERMS & CONDITIONS

### 4-1 Type of Contract

This ITB may result in the award of one or more Contracts. King County Will utilize these Contracts as indefinite quantities Contracts and issue standard purchase orders to the Contractor citing item number, description, deliver terms and Contract price. The standard purchase orders Will be the authorization for the Contractor to perform the service or deliver the goods as directed.

### 4-2 Contract Term

The term of this Contract shall be two (2) years commencing on the effective date of the Contract and subject to the termination provisions at subsection 3-4C and as described in Section 6 "Technical Specifications". King County has the option to extend the Contract four additional terms of two (2) years each. The maximum term for the Contract, consisting of the base period plus extensions, is ten (10) years unless extended by written agreement signed by the parties.

### 4-3 Contract Value

The estimated annual value of these Contracts is approximately \$30,000 per year. King County will not be limited, restricted or bound by this dollar value, nor shall the County be obligated to purchase any items contained in these Contracts. The annual usage of these contracts may be very irregular due to the potential demands during construction of the Brightwater and Carnation plants which may result in in expenditures in excess of \$200,000 a year for several years.

### 4-4 Payment Procedures

#### A. Invoices

The Contractor for Work Accepted by the County shall furnish invoices to:

King County Accounts Payable  
M/S EXC-ES-0875  
Exchange Building, 8<sup>th</sup> floor  
821 Second Avenue  
Seattle, WA 98104-1598

**Important** – When a purchase order is issued against this Contract that has the potential for multiple or partial deliveries, a separate invoice shall be generated for each completed delivery Accepted by the County. All invoices shall include the following information: purchase order number, requester's name and phone number, date of invoice, invoice number and invoice total. For each item in the Contract provide the: item number, quantity, description, contract price and when applicable provide the manufacture, list price and discounts. For Services identify from the bid, either milestone Acceptance or hourly rates, hours worked, total hours or related fees.

**FAILURE TO COMPLY WITH THESE REQUIREMENTS OR TO PROVIDE AN INVOICE IN CONFORMANCE WITH THE CONTRACT MAY DELAY PAYMENT.**

#### B. Payments

Within thirty (30) Days after receipt of an invoice, the County shall pay the Contractor for accepted Work, upon acceptance of payment Contractor waives any claims for the Work covered by the Invoice.

If the Contractor is registered with the State of Washington it shall add all applicable State sales/use taxes to each invoice and upon receipt of the payment promptly remit appropriate amounts to Washington, or the County will make payment directly to the State.

#### **4-5 Purchase Orders**

Purchase order(s) shall be issued referencing this Contract number. Purchase order(s) shall define and authorize the Work by the Contractor based on the prices as established pursuant to this Contract. Purchase order(s) issued by the County may reflect agreed to modification of Contract terms, funding or other matters subject to subsection 3-2, Contract Changes.

#### **4-6 Pricing**

- A. Prices for the initial Contract period shall be as identified in the price list contained or referenced in Exhibit A - Bid Pricing. After the initial Contract period, the prices shall be based on the original price list unless King County has evaluated and accepted a subsequent price list. Subsequent price lists shall be mailed to the Buyer and Project Managers involved in previous purchases for evaluation and determination that the prices are fair and reasonable.
- B. If the revised price list is accepted by King County, acceptance will be by incorporation of the new prices with the original multiplier in future purchase orders. If King County determines the prices contained in new price lists are not fair and reasonable, King County may purchase the items through any other means available.
- C. King County will utilize the price list and multiplier of the awarded Contractor as identified in the Contract for ordering equipment associated with a line item or a schedule.

When the Contractor issues a new price list and requires its use by King County, the Contractor must verify that subsequent purchase orders incorporate the correct prices. King County will not be bound by prices contained in an invoice that are higher than those in the purchase order. If prior acceptance of the higher price has not been agreed to by King County, the invoice may be rejected and returned to the Contractor for a correct invoice.

#### **4-7 Shipping Charges**

All prices shall include freight FOB to the designated delivery point. The County shall reject requests for additional compensation for freight charges.

#### **4-8 Packing Slips**

Each delivery to the County Shall have a packing slip enclosed that identifies the requester, Contract number, requisition number, King County part number, unit price and quantity of each part shipped. If the delivery is a partial shipment, indicate on the packing slip that it is not a complete shipment of that requisition and identify the items not shipped and Provide a projected completion date of the requisition.

If the delivery combines items from more than one requisition, separate packing slips must be included in the shipment for each requisition. A packing slip Will not serve as an invoice. A separate invoice must be sent to Accounts Payable.

#### **4-9 Delivery Points**

This Contract requires all goods and/or services and supervision necessary to furnish the goods and services as set forth herein to be made to any sites in King County to be determined at the sole discretion of King County.

#### **4-10 Use Report**

The Contractor Shall, if requested, submit to the Procurement Services Division Buyer a quarterly report of sales made to King County under this Contract.

The report, in a format acceptable to King County, Shall identify the customer for each item purchased, the item description, whether it's a Contract or non-Contract item, quantity, price and discount.

#### **4-11 Warranty Provisions**

**A. No Waiver of Warranties and Contract Rights.**

Conducting of tests and inspections, review of Scope of Work or plans, payment for a Work, or Acceptance or Final Acceptance of the Work by the County shall not constitute a waiver of any rights under this Contract or in law. The termination of this Contract shall in no way relieve the Contractor from its warranty/guarantee responsibility.

**B. Warranty Term.**

The Contractor warrants that the Work performed under this Contract shall be free from defects in material and workmanship, and shall conform with all requirements of this Contract, for a period of twelve (12) months from date of Final Acceptance of such Work by the County. Any Work corrected shall be subject to this subsection to the same extent as the Work initially Provided.

**C. Warranty Applicable to Third Party Suppliers, Vendors, Distributors and Subcontractors.**

The Contractor shall ensure that the warranty requirements of this Contract are enforceable through and against the Contractor's suppliers, vendors, distributors and Subcontractors. The Contractor is responsible for liability and expense caused by any inconsistencies or differences between the warranties extended to the County by the Contractor and those extended to the Contractor by its suppliers, vendors, distributors and Subcontractors. Such inconsistency or difference shall not excuse the Contractor's full compliance with its obligations under this Contract. The Contractor shall cooperate with the County in facilitating warranty related Work by such suppliers, vendors, distributors and Subcontractors.

#### **4-12 Warranty Remedies**

If at any time during the twelve (12) Month period immediately following Acceptance of any Work covered by this Contract, Contractor or the County discovers one or more material defects or errors in the Work or any other aspect in which the Work materially fails to meet the provisions of the warranty requirements herein Contractor shall, at its own expense and within thirty (30) Days of notification of the defect by the County, correct the defect, error or nonconformity.

Notice Required. The County shall give written notice of any defect to the Contractor. If the Contractor has not corrected defect with thirty (30) Days after receiving the written notice, the County, in its sole discretion, may correct the defect itself. In the case of an emergency where the County believes delay could cause serious injury, loss or damage, the County may waive the written notice and correct the defect. In either case, the County shall charge-back the cost for such warranty repair to the Contractor.

The Contractor is responsible for all costs of repair or replacement in order to restore the Work to the applicable Contract requirements or Scope of Work, including shipping charges, for Work found defective within the warranty period, regardless of who actually corrects the defect.

This procedure to remedy defects is not intended to limit or preclude any other remedies available to the County by law, including those available under the Uniform Commercial Code, Title 62A RCW.

#### **4-13 Nondisclosure of Data**

Data provided by the County either before or after Contract award shall only be used for its intended purpose. Contractors and Subcontractors shall not utilize nor distribute the County data in any form without the express written approval of the County.

#### **4-14 Non-Disclosure Obligation**

While performing the Work under this Contract, the Contractor may encounter personal information, licensed technology, Software, Documentation, drawings, schematics, manuals, data and other materials described as "Confidential", "Proprietary" or "Business Secret". The Contractor shall not disclose or publish the information and material received or used in performance of this Contract. This obligation is perpetual. The Contract imposes no obligation upon the Contractor with respect to confidential information which the Contractor can establish that: a) was in the possession of, or was rightfully known by the Contractor without an obligation to maintain its confidentiality prior to receipt from the County or a third (3rd) party; b) is or becomes generally known to the public without violation of this Contract; c) is obtained by the Contractor in good faith from a third (3rd) party having the right to disclose it without an obligation of confidentiality; or, d) is independently developed by the Contractor without the participation of individuals who have had access to the County's or the third (3rd) party's confidential information. If the Contractor is required by law to disclose confidential information the Contractor shall notify the County of such requirement prior to disclosure.

#### **4-15 Public Disclosure Requests**

Contracts shall be considered public documents and, with exceptions Provided under public disclosure laws, shall be available for inspection and copying by the public.

If a Contractor considers any portion of the Work, including Software, data and related materials, delivered to the County to be protected under the law, the Contractor shall clearly identify each such item with words such as "CONFIDENTIAL," "PROPRIETARY" or "BUSINESS SECRET." If a request is made for disclosure of such item, the County shall determine whether the material should be made available under the law. If the material or parts thereof are determined by the County to be exempt from public disclosure, the County shall not release the exempted documents. If the material is not exempt from public disclosure law, the County shall notify the Contractor of the request and allow the Contractor ten (10) Days to take whatever action it deems necessary to protect its interests. If the Contractor fails or neglects to take such action within said period, the County shall release the item deemed subject to disclosure. By signing this Contract, the Contractor assents to the procedure outlined in this subsection and shall have no claim against the County on account of actions taken under such procedure.

#### **4-16 No Prototype Components**

All hardware, Software and Work, shall be in production and be used by customers comparable to the County at the time of the Contract effective date. Test or prototype items shall be clearly identified as such. A sufficient inventory of the Work shall be available to meet delivery requirements.

#### **4-17 Hazardous Chemical Communication**

In order to comply with WAC 296-62-054, Hazard Communication, the Contractor shall prepare, a Material Safety Data Sheet (MSDS) for all products containing any toxic products that may be harmful to the end user. The MSDS Sheet is to accompany the toxic product(s) to the specified delivery sites.

Include the following information in the MSDS:

- Chemical Abstract Service (CAS) numbers for every chemical that is listed in the MSDS.
- If the product is actually used diluted, the rate should be so stated in the MSDS and the hazards and corresponding Personal protection, etc. also be listed.
- SARA Title 3 chemicals shall be listed with the percentage by weight of the total product.
- A statement as to the intended use of the product.

#### **4-18 Industrial and Hazardous Waste**

The Contractor shall comply with all applicable local ordinances, state and federal statutes, and supporting rules and regulations governing the discharge of industrial waste to a public sewer, private sewer, or side sewer tributary to the metropolitan sewerage system.

Contractor shall handle and dispose of all hazardous wastes in compliance with all applicable local, state and federal laws and regulations, including the Resource Conservation and Recovery Act, the Washington Hazardous Waste Management Act, and applicable rules and regulations of the Environmental Protection Agency and the Department of Ecology governing the generation, storage, treatment, transportation or disposal of hazardous wastes.

#### **4-19 Patents and Royalties**

The Contractor is responsible for paying all license fees, royalties or the costs of defending claims for the infringement of any intellectual property that may be used in performing this Contract. Before final payment is made on this Contract, the Contractor shall, if requested by the County, furnish acceptable proof of a proper release from all such fees or claims.

#### **4-20 Changed Requirements**

New Federal, State and County laws, regulations, ordinances, policies and administrative practices may be established after the date this Contract is established and may apply to this Contract. To achieve compliance with changing requirements, the Contractor agrees to accept all changed requirements that apply to this Contract and require Subcontractors to comply with revised requirements as well. Changed requirements shall be implemented through subsection 3-2, Contract changes.

## **SECTION 5 - TECHNICAL SPECIFICATIONS (STATEMENT OF WORK)**

### **5-1 Objective**

A primary objective of the Productivity Initiative adopted by the County for the Wastewater Treatment Division is standardization. This procurement, ITB 05-017 JAE, allows for standardization of the instruments throughout the wastewater service area.

Flow meters, transmitters, receivers, switches, gauges, sensors, analyzers, isolators, seals...etc. are the subject of this procurement and it is required that the instruments in a schedule be from one manufacture.

Each remote pump station has over \$10,000 of instruments that must be maintained. The same instruments must be installed in all treatment plants and off site facilities. Over the next ten (10) years, the existing instruments in excess of sixty (60) pump stations and treatment plants will be standardized. The South Plant and West Point are scheduled for complete control systems upgrades with ten years. Brightwater and Carnation are in the design stage and planned to be complete within the ten (10) year period.

With this standardization, the same people will be trained to maintain the instruments at all the various sites and the County can develop standards for operation and maintenance.

### **5-2 Procedures**

- A. The Work under this Contract consists of, but not limited to supply of various instruments and associated items as specified in "Item Specifications".
- B. This ITB will result in indefinite quantity contracts for the goods covered under this solicitation. The goods will be ordered on an as-needed basis. King County makes no guarantee of the quantities of products to be ordered, if any, and the County further makes no guarantee that the Contractor will receive any orders. King County reserves the right to purchase various instruments as specified herein from other than the successful Contractor if, in the opinion of King County, it is in the best interest of the King County to do so.
- C. King County may issue purchase orders to the Contractor directing delivery of various instruments specified in this Contract: or at the County's sole option, the County may require in its Contract documents that the construction contractor purchase the instruments specified in this Contract. In the latter case, the Contractor shall quote to all interested firms the prices set forth herein. The Contractor agrees that should the County elect to execute a construction contract for which that quote was used in submitting its bid, said parties shall be entitled to the same terms and conditions, including but not limited to delivery and price as set forth herein.
- D. It is intended that the Contractor furnish various instruments as specified herein for up to a maximum period of ten (10) years. By basing the Contract pricing on the current catalog, price list or price sheet with a multiplier, the County will be able to use the awarded Contracts for the purchase of an extended range of new or revised instruments and associated equipment. The instruments may be ordered separately or in quantities, to be shipped to locations as designated by King County.

## Item Specifications

### Schedule A

Item No. 1

Instrument Identification:..... FI  
Instrument Description:..... Rotameter  
Instrument Function: ..... Level Measurement  
Power Supply:..... N/A  
Signal Input: ..... N/A  
Signal Output: ..... N/A  
Process: ..... Wastewater  
Process Connections:..... NPT or Flanged (150# RF)

#### Product requirements:

1. Plain tapered tubes with rod guided float
2. Tube: Glass
3. Accuracy: +/-2% full scale
4. Connections: Rotatable 360° to 90° intervals
5. Scale: Detachable metal scale
6. Repeatability: 0.5% full scale
7. Fluid Temperature limit: 33° to 250°F
8. Orientation (Vertical/horizontal): Per detail specifications
9. Inlet/Outlet pipe size: Per detail specifications
10. Flow rate: Per detail specifications
11. Operating temperature/pressure: Per detail specifications
12. Scale range: Per detail specifications
13. Float/fittings: 316 SS

Instrument Identification:..... LI  
Instrument Description:..... Level Glass Gauge  
Instrument Function: ..... Level Measurement  
Power Supply:..... N/A  
Signal Input: ..... N/A  
Signal Output: ..... None  
Process: ..... Wastewater  
Process Connections:..... ½ to ¾ NPT

Product requirements:

1. Chamber: Standard solid one-piece
2. Glass: Tempered Borosilicate
3. Glass temperature limit: 600°F
4. Pressure limit: 300# AMSO
5. Pressure testing: 1.5 times rated value at 100°F
6. Wetted parts conformance: NACE MR-01-75
7. Length: Per detailed specifications
8. Cover: Steel
9. Gaskets: Factory standard

Instrument Identification:..... LG

Instrument Description:..... Level Gauge

Instrument Function: ..... Level Measurement

Power Supply:..... N/A

Signal Input: ..... N/A

Signal Output: ..... Switch closure actuated by tipping bucket mechanism

Process Connections:..... None

Product requirements:

Sensor:

1. Tipping bucket type
2. Resolution: 1-tip
3. Material: Anodized aluminum
4. Rainfall per tip: 0.01"
5. Orifice diameter: 6" to 8"
6. Accuracy: Up to 1"/hr: +/-1%
7. Accuracy: 1 to 2"/hr: +0, -3%
8. Accuracy: 2 to 3"/hr: +0, -5%
9. Temperature: 0 to 122°F
10. Humidity: 0 to 100%

Lead:

1. Length – Per detail specifications

Mounting:

1. King County supplied pole

Instrument Identification:..... IS

Instrument Description:..... Instrument seal

Instrument Function: ..... To isolate (protect) instrument

Power Supply:..... N/A

Signal Input: ..... N/A

Signal Output: ..... N/A

Instrument Connection:..... NPT F threaded, size per detailed specification

Process Connection:..... NPT M or F threaded or raised face flanged, size as required per detailed specification, with flushing connection.

Product Requirements:            General:    Diaphragm type seal to protect instruments from slurry and corrosive fluids while providing accurate and dependable pressure measurements.

1. Diaphragm material: 316L SS
2. Bottom housing material: Steel or 316 SS, as required per detailed specification
3. Pressure rating: 2500 PSI
4. Instrument connection size: Per detail specifications
5. Filling fluid: Silicone

Instrument Identification:..... IS

Instrument Description:..... Instrument seal

Instrument Function: ..... To isolate (protect) instrument

Power Supply:..... N/A

Signal Input: ..... N/A

Signal Output: ..... N/A

Process Connection:..... 3", ANSI B16.5 class 150 316 Stainless Steel

Product Requirements:            General:    Donut shaped pressure seal to protect instruments from slurry and corrosive fluids while providing accurate and dependable pressure measurements.

1. Body material (non-wetted): Carbon steel
2. Flanges: 150# in carbon steel
3. Fill fluid: Silicone Oil
4. Sleeve material (sensing ring): Buna-N
5. Sleeve material temperature rating: -30 to 230°F
6. Working process pressure: Per detailed specifications
7. Sensing area: 360° around full inside circumference of pipe

Instrument Identification:..... SE

Instrument Description:..... Speed sensor

Instrument Function: ..... Proximity measurement

Power Supply:..... 12 VDC

Signal Input:..... None

Signal Output: ..... See below

Process:..... None

Process Connection:..... None

Product Requirements:            General:    The logic magnetic pickup provides a detection of moving ferrous targets.

Sensor:

1. Type: Logic Magnetic Pick-up
2. Output 1: NPN open collector: Contact closure output – Per detail specifications
3. Output 2: Emitter-follower: Voltage pulse – Per detail specifications
4. Operating frequency: 10 KHz Maximum
5. Operating temperature: 0 to 140°F
6. Construction: Epoxy encapsulated in 0.750" (+/-0.005") dia. 304 SS case
7. Connector: Polarized 5/8"-24 thread 3-pin connector – Per detail specifications

Cable:

1. Integrally potted PVC jacketed, 3-wire 22 AWG conductors, with stranded shield and 100% foil shield coverage – Length available: 10', 25', 50'. Length as specified in detail specifications
2. Separate cable 3-pin connector. Length available: 10', 25', 50'. Length as specified in detail specifications

Mounting options:

1. Block mount – Per detail specifications
2. Plug mount – Per detail specifications

Instrument Identification:..... TE

Instrument Description:..... Temperature sensor

Instrument Function: ..... Temperature measurement

Power Supply:..... N/A

Signal Input:..... N/A

Signal Output: ..... Compatible to transmitter to produce 4-20 mA

Process Connection:..... NPT

Sensor:

1. Sensor input: RTD, 3 wire
2. Configuration: Single element
3. Temperature: -58° to 752°F
4. Type: Spring loaded
5. Diameter: Mfg. Std.
6. Material: Stainless steel
7. Element: 100 ohms
8. Length: Immersion, lagging, extension per detail specifications

Thermowell:

1. Type: Tapered
2. Material: 316 SS
3. Process thread: ½" NPT
4. Length: Per detail specifications

Head:

1. Material: Aluminum, flat cover
2. Connections: Six terminals

Extension:

1. Coupling/nipple extension
2. No extension
3. Union/nipple extension

Instrument Identification:..... TE  
Instrument Description:..... Temperature sensor  
Instrument Function: ..... Temperature measurement  
Power Supply:..... N/A  
Signal Input:..... N/A  
Signal Output: ..... Compatible to transmitter to produce 4-20 mA  
Process Connection:..... NPT

Sensor:

1. Sensor input:: Thermocouple
2. Configuration: Dual junction
3. Junction type: E, J, K, T – Per detail specifications
4. Junction: Ungrounded
5. Temperature: --292° to 2102°F
6. Type: spring loaded
7. Diameter: Mfg. Std.
8. Material: Stainless steel
9. Length: Immersion, lagging, extension per detail specifications

Thermowell:

1. Material: 316 SS
2. Process thread: ½" NPT
3. Length: Per detail specifications

Head:

1. Material: Cast iron or stainless steel
2. Connections: Six terminals

Extension:

1. Coupling/nipple extension
2. No extension
3. Union/nipple extension

Instrument Identification:..... AE/AIT

Instrument Description:..... Oxygen Analyzer

Instrument Function: ..... Depletion of Oxygen

Power Supply:..... None (10-28VDC 2-wire loop power)

Signal Input:..... Process

Signal Output: ..... 4-20 mA

Process:..... Waste water

Process Connections:..... NPT per detail specifications

Product Requirements:                      General:    The gas detector shall be a single point unit designed for fixed installation and shall include a sensor, transmitter, and accessories.

Sensor:

1. Range: 0 – 25%
2. Response time: <15 seconds
3. Temperature limit: -14° to 122°F
4. Humidity: Up to 99% RH

Transmitter:

1. Housing: NEMA 4 or NEMA 7 per detail specifications
2. Housing material: According to NEMA rating
3. Temperature limit: -40° to 140°F
4. Self-diagnostics: Weak sensor indication, electronic faults, missing sensor, sensor configuration, and SST failure
5. Linearity: +/-2% FS
6. Repeatability: +/- 2% FS
7. Display: LCD
8. Approval: CSA

Cable:

1. Maximum separation between sensor and transmitter 50 ft, length per detail specifications

Instrument Identification:..... AE/AIT

Instrument Description:..... Combustible Gas Analyzer

Instrument Function: ..... Analysis of Gas for combustible Hydrocarbons (C1 – C10)

Power Supply:..... 24VDC nominal, 18 – 28 VDC, 10 Watts max

Signal Input:..... Process

Signal Output: ..... 4-20 mA (See below)

Process:..... Waste water

Process Connections:..... See below

Product Requirements:                      General:    The combustible gas detector shall be a single point unit designed for fixed installation and shall include a sensor, transmitter, and accessories.

#### Sensor:

1. Design: NDIR, dual wavelength or photo acoustic, temperature compensated
2. Connection: Flow cell with aspirator or Stand Alone, as specified
3. Temperature limit: -40° to 140°F (-40 °C to 60°C)
4. Humidity range: 0 to 99% RH, non-condensing

#### Transmitter:

1. Housing: NEMA 7
2. Material: Epoxy-coated Aluminum or stainless steel
3. Temperature limit: -40° to 140°F (-40 °C to 60°C)
4. Calibration: Non-intrusive calibration method. Microprocessor based, capable of retaining configuration through power outage
5. Output signal: 4-20 mA into 800 ohms min. at 24 VDC
6. Digital Output (optional): MODBUS RTU or other acceptable industrial protocol via 2/4 wire RS-485 or other acceptable interface, per detail specifications
7. Alarm Relays: 2 relays – SPST rated 5A @ 250VAC / 30VDC resistive, programmable as fail safe, latching, hi or low alarm
8. Trouble relay: SPST normally closed, rated 5A @ 250VAC / 30VDC, Opens on fault conditions
9. Response time: <10% seconds, to 50% full scale, <30 seconds, to 90% full scale
10. Linearity: +/-2% LEL, below 40% LEL
11. Repeatability: +/- 2% LEL, below 40% LEL
12. Display: LCD (%LEL), WARN and HI ALARM LED's or LCD Icons
13. Approval: UL/FM/CSA Class I Div. 1, Groups B, C, D

#### Cable:

1. ONLY IF NO ASPIRATOR: Maximum separation between sensor and transmitter 106 ft: 3-conductor shielded, plus conforming ground

Instrument Identification:..... AE/AIT

Instrument Description:..... Hydrogen Sulfide Gas Analyzer

Instrument Function: ..... Analysis of Gas

Power Supply:..... None (10-28VDC 2-wire loop power)

Signal Input:..... Process

Signal Output: ..... 4-20 mA

Process:..... Waste water

Process Connections:..... NPT per detail specifications

Product Requirements:                      General:    The gas detector shall be a single point unit designed for fixed installation and shall include a sensor, transmitter, and accessories.

Sensor:

1. Range: 0 – 50 PPM
2. Response time: <15 seconds
3. Temperature limit: -40° to 122°F
4. Humidity: Up to 99% RH

Transmitter:

1. Housing: NEMA 4 or NEMA 7 per detail specifications
2. Housing material: According to NEMA rating
3. Temperature limit: -40° to 140°F
4. Self-diagnostics: Weak sensor indication, electronic faults, missing sensor, sensor configuration, and SST failure
5. Linearity: +/-2% FS
6. Repeatability: +/- 2% FS
7. Display: LCD
8. Approval: CSA,

Cable:

1. Maximum separation between sensor and transmitter 50 ft, length per detail specifications

Instrument Identification:..... UI/UA  
Instrument Description:..... 4 channel Receiver  
Instrument Function: ..... Gas monitoring centralization  
Power Supply:..... 120 VAC  
Signal Input:..... 4-20mA  
Signal Output: ..... Display of gas concentration, alarms and relay contacts, 4 – 20mA outputs  
Process:..... Waste water  
Process Connections:..... NPT per detail specifications  
Product Requirements:                    General:    The receiver shall support the gas detection via continuous simultaneous display of up to four channels.

Receiver:

1. Enclosure: NEMA – 4X, wall mount
  2. Temperature range: -14 to 122°F
  3. Horn: Integral – 85dB @ 3 ft
  4. Relays: Standard – Hi & Low alarm, fail and horn, SPDT rated 5A at 250vDC
  5. Optional relays: Total eight – (6) SPDT 5A at 30 vDC/277VAC, (2) DPDT 5A at 30 vDC/277VAC
  6. Relays location: Within 50 ft of monitor
  7. Relay box rating: NEMA – 4X
  8. Display: LCD – Simultaneous display of each channel input, Individual LED indication for fail, low alarm, high alarm, and inhibit
  9. Programming: Time delay, failsafe/non-failsafe, manual/automatic reset
  10. Output option: 4-20mA output for each channel
  11. Repeatability: +/-0.5% of full scale
  12. Accuracy: +/-1% full scale
  13. Approval: CSA
- Option:     24 Vdc battery back up for up to 2 hours

Instrument Identification:..... AE/AIT  
 Instrument Description:..... Turbidity meter  
 Instrument Function: ..... Turbidity measurement  
 Power Supply:..... 120 VAC  
 Signal Input:..... Process  
 Signal Output: ..... 4 – 20 mA  
 Process:..... Wastewater  
 Process Connection:..... See below

Product Requirements:                    General:    Turbidity is measured by directing an incandescent light from the sensor head assembly down into the sample in turbidimeter body. Once the sample goes through the bubble removal system, it enters the center column, rises into the measuring chamber and spills over the weir into the drain port.

Sensor:

1. Type: Remote
2. Range: 0 to 100 NTU
3. Accuracy: +/-2% reading, or +/-0.015 NTU, whichever is greater from 0 to 40 NTU
4. Accuracy: +/-5% of reading from 40 to 100 NTU
5. Repeatability: Better than +/-1% of reading or +/-0.002 NTU, whichever is greater
6. Signal average time: 6, 30, 60, 90 seconds
7. Sample flow req'd: 3.1 to 11.9 gal/hr
8. Humidity: 5 to 95% non-condensing
9. Sample temperature limit: 32 to 122°F
10. Sample inlet: ¼" FNPT or per detail specifications
11. Drain fitting: ½" FNPT or per detail specifications
12. Mounting: Turbidity meter body and head assembly: wall and floor stand
13. Enclosure: NEMA – 4X
14. Certification: UL

Controller:

1. Ambient condition: One sensor (-4 to 140°F); two sensors (-4 to 104°F)
2. Display: LCD
3. Output: (2) – 4 to 20 mA, max. impedance 500 ohms
4. Alarms: (2) set point alarms with SPDT relay with un-powered contacts rated 5A resistive load at 230 Vac
5. Option: RS-485 (MODBUS)
6. Memory: EEPROM
7. Mounting: Surface, panel, and pipe – per detail specifications
8. Enclosure: NEMA 4X
9. Certification: UL
10. Data collection: Selectable interval: 1 to 15 minutes
11. Cable length for remote mount: 6 ft std.

Option:

1. Controller must be capable of accepting two sensor inputs. Order one more sensor if req'd, per detailed specifications
2. Cable for remote mount:: Extended maximum length: 25 ft, length per detailed specifications

Instrument Identification:..... AE/AIT  
Instrument Description:..... Chlorine Analyzer  
Instrument Function: ..... Chlorine Measurement  
Power Supply:..... 120 VAC  
Signal Input:..... Process  
Signal Output: ..... 4-20 mA  
Process:..... Waster water  
Process Connections:..... See below for sample connections  
Product Requirements:                    General:    The chlorine analyzer shall utilize the DPD colorimetric method to measure total residual chlorine.

Sensor/Electronics:

1.    Range: 0 to 5mg/L total residual chlorine
2.    Minimum detection limit: 0.035 mg/L
3.    Minimum sample flow req'd: 200 mL per minute
4.    Accuracy: +/-5% or +/-0.035mg/L as CL2, whichever is greater
5.    Sample conditioning inlet pressure: 1 to 75 psig
6.    Sample frequency: Every 2.5 minutes
7.    Operating temperature range: 41 to 104°F
8.    Alarms: Two: System warning or system shutdown; equipped with SPDT relay contact rated for 5A resistive load at 230 Vac
9.    Recorder output: 4 – 20 mADC
10.   Optional protocol: Aqua Trend Network
11.   Compliance: UL
12.   Enclosure material: ABS plastic
13.   Rating: IP62
14.   Sample input connection: Factory standard
15.   Drain connection: Factory standard

Mounting:

1.    Wall mount

Instrument Identification:..... AE/AIT  
 Instrument Description:..... pH/ORP analyzer  
 Instrument Function: ..... pH measurement  
 Power Supply:..... 9-32 Vdc (transmitter)  
 Signal Input:..... N/A  
 Signal Output: ..... 4 – 20 mA with Fieldbus and HART protocol as an option  
 Process:..... Wastewater  
 Process Connection:..... 1" MNPT front and rear facing

Product Requirements:            General:    Measurement of pH by the sensor is accomplished by immersing a glass or metal electrode, with a reference electrode, into a process solution. pH is related to logarithm of hydrogen ion activity. ORP is related to logarithm of ratio of oxidation activity to reduction activity.

#### Sensor:

1. Sensing electrode: Flat glass, field replaceable
2. Preamplifier: Integral
3. Installation: Immersion/submersible.
4. Compensation: Automatic temperature utilizing platinum RTD – Pt100
5. Compensation limit: 5 to 270°F
6. Sensor assembly depth: 2.5" minimum; 5" maximum.
7. Operating pressure: 0 to 100 psig
8. Operating temperature: 32 to 212°F
9. Wetted material: Mfr. Stds.
10. Range: 0 – 14 pH

#### Sensor Mounting

##### Options:

1. With flow through tee or std. pipe – per detail specifications

##### Transmitter:

1. Enclosure: NEMA 4X
2. Operating limit: -4 to 149°F
3. Relative humidity: 0 to 95%, non-condensing
4. Measurement range: Limit: 0 to 14 pH
5. Accuracy: +/-1 mV @ 25°C +/-0.01 pH
6. Repeatability: +/-1 mV @ 25°C +/-0.01 pH
7. Conduit opening: ¾" FNPT
8. Safety approvals: FM
9. Display: LCD

## Transmitter Mounting

### Options:

1. 2" pipe mounting kit

### Cable:

1. Provide signal cable between the sensor and transmitter by the mfr., standard – 25 ft
2. If need additional length: Order it as an option – Maximum 500 ft – per detail specifications

### Note:

1. Must meet intrinsic safe area code FISCO

Instrument Identification:..... LT

Instrument Description:..... Level Transmitter

Instrument Function: ..... Level measurement

Power Supply:..... N/A

Signal Input:..... Process

Signal Output: ..... 4-20 mA

Process:..... Wastewater

Process Connections:..... Flush elastometric diaphragm with titanium retaining ring

Product Requirements:

1. Submersible/depth pressure sensor is a micro-machined silicon piezoresistive type that is resistance to shock and vibration.
2. Transmitter is integral to the sensor assembly.

Sensor:

1. Construction: Titanium
2. Accuracy:  $\pm 0.25\%$  full scale on best straight line
3. Diaphragm: Flush teflon-coated elastometric
4. Operating range: Elastometric diaphragm: 6 ft H<sub>2</sub>O to 46 ft H<sub>2</sub>O
5. Operating range: Plastic screen: 500 psig
6. Overpressure: 4 times minimum
7. Temperature effects:  $\pm 1.5\%$  FS TEB 10 psig and up
8. Operating temperature range: -5 to 140°F
9. Compensated temperature range: 30 to 86°F (If process temp. is  $<30^{\circ}\text{F}$  or  $>86^{\circ}\text{F}$ , output will have an inaccuracy of  $\leq 1\%$ )
10. UL listed, Intrinsically safe
11. Classification: Class 1, Div 1, Groups A – D; Class 2, Groups E – G
12. Rating: NEMA 6

Transmitter:

1. Waterproof assembly
2. Electrical: 2 wire

Cable:

1. Polyurethane (molded to transmitter body)
2. Length: Per detailed specifications

Sensor filter:

1. Polypropylene and neoprene construction.

Note: If process turbulent, contact factory for installation details

Sensor termination  
enclosure (Option):

1. Rating: NEMA 4X
2. Vent: PTFE waterproof
3. Material: PVC base and clear halogen free
4. Terminal strip: Accepts 24 AWG to 12 AWG wires

Mounting Option:

1. 2" pipe mount kit
2. Din rail mounted lightning arrestor: 2, 3, or 4 wire

Instrument Identification:..... PT  
Instrument Description:..... Gage pressure transmitter  
Instrument Function: ..... Pressure measurement  
Power Supply:..... N/A  
Signal Input:..... N/A  
Signal Output: ..... 4-20 mA with Digital Signal Based on HART protocol or Foundation field-bus  
– As specified  
Process Connection:..... High pressure side: 1/2-inch female NPT (Flange adapters as required) Low-  
pressure side: None

Product Requirements:

1. Pressure transmitter shall be capacitance type.
2. Unless otherwise specified, wetted parts shall be type 316 stainless steel.
3. Rangeability of 100:1.
4. Accuracy shall be 0.075% calibrated span.
5. Transmitter shall be available in multiple ranges from –25" H<sub>2</sub>O to 2000 psi range. Specific range per detail specifications.
6. Transmitters for spans less than or equal to 40 psi shall be provided with one 1/2-inch process connection and one 1/4-inch drain/vent port.
7. Transmitters for spans greater than 40 psi shall be provided with manufacturer's standard connections.
8. Static pressure rating shall be 2000 psi or greater.
9. Shall have FM Explosion proof approval.
10. LCD meter

Seals:

1. Type: Diaphragm, ANSI/ASME B16.5 standard
2. Process Connection: 3", Class 150, flanged, flush surface
3. Diaphragm and wetted parts: 316L SST
4. Upper Housing and Mounting Flange: 316L SST
5. Lower housing: 316 SST
6. Temperature limit – High side: -40 to 300°F

Capillary option:

1. Seal location: High pressure side of transmitter, direct mounting
2. Fill fluid: D.C. 200 Silicone
3. Capillary seal connection material: 316 SST armored sleeving
4. Capillary length: Per detailed specifications

Note:

1. Must meet intrinsic safe area code FISCO

Instrument Identification:..... PDT  
Instrument Description:..... Differential pressure transmitter  
Instrument Function: ..... Pressure measurement  
Power Supply:..... N/A  
Signal Input:..... N/A  
Signal Output: ..... 4-20 mA with Digital Signal Based on HART protocol or Foundation field-bus  
– As specified  
Process Connection:..... High-Pressure side: 1/2-inch female NPT (Flange adapters as required).Low  
Pressure side: 1/2-inch female NPT (Flange adapters as required).

Product Requirements:

1. Pressure transmitter shall be capacitance type.
2. Unless otherwise specified, wetted parts shall be type 316 stainless steel.
3. Rangeability of 100:1
4. Accuracy shall be 0.075% of calibrated range.
5. Transmitters shall be available in various ranges from -25"H<sub>2</sub>O to 2000 psi range. Specific range per detail specifications.
6. Differential pressure transmitters shall be provided with a three-valve manifold per Section 17211 and with two 1/4-inch drain/vent ports.
7. Static pressure rating shall be 2000 psi or greater (valid for without seal applications).
8. Reference diaphragm shall be provided with a weatherproof, bug-proof atmospheric vent.
9. Shall have FM Explosion proof approval.
10. LCD meter

Seals:

1. Type: Diaphragm, ANSI/ASME B16.5 standard
2. Process Connection: 3", Class 150, flanged, flush surface
3. Diaphragm and wetted parts: 316L SST
4. Upper Housing and Mounting Flange: 316LSST
5. Lower housing: 316 SST
6. Temperature limit – High side: -40 to 300°F

Capillary option:

1. Seal location: High pressure side of transmitter, direct mounting
2. Fill fluid: D.C. 200 Silicone
3. Capillary seal connection material: 316 SST armored sleeving
4. Capillary length: Per detailed specifications

Note:

1. The instruments shall be calibrated and Pressure tested by the vendor with the Manifold fitted.
2. Must meet intrinsic safe area code FISCO

Instrument Identification:..... TT

Instrument Description:..... Temperature transmitter

Instrument Function: ..... Temperature measurement

Power Supply:..... N/A

Signal Input:..... N/A

Signal Output: ..... 4-20 mA with digital signal based on HART protocol or Foundation fieldbus –  
As specified

Process Connection:..... NPT

Product Requirements:

1. Stability: +/-0.1% of reading or 0.1°C, whichever is greater, 2 yrs. For RTD and 1 yr for thermocouple input
2. Sensor input: 2, 3, or 4 wire RTD
3. Sensor input (option): Thermocouple types B, E, J, K, N, R, S, T
4. Configuration: Single or dual input
5. Temperature limit with LCD: -4 TO 185°F
6. Range: -300 to 1200°F RTD type
7. Approval: FM, explosion proof
8. Rating: Class 1, Division 1, Groups A, B, C, and D
9. Housing: Field mount or integral
10. Display: LCD
11. Enclosure: NEMA 4X
12. Features: Sensor drift alert and Hot back up

Options:

1. Mounting bracket for 2" pipe and panel mount
2. "L" Mounting bracket for 2" pipe mount
3. Integral transient protector

Note:

1. Must meet intrinsic safe area code FISCO

Instrument Identification:..... FE/FIT

Instrument Description:..... Magnetic flow metering system

Instrument Function: ..... Flow measurement

Power Supply:..... 120 VAC (transmitter)

Signal Input:..... Process

Signal Output: ..... 4 – 20 mA DC

Process Connection:..... Flange, ANSI B16.5 Class 150, raised face

Product Requirements:

General:

1. Magnetic flow meter shall be provided as a system consisting of a flow tube and remotely mounted converter/transmitter complete with all necessary interconnecting cables for the flow tube to transmitter separation shown.
2. System shall be suitable for measuring raw sewage flow.
3. Provide grounding rings for both upstream and downstream connections with the process piping.
4. Provide mechanical protection for the flow tube flanges and liner during installation or removal of the flow tube.
5. Provide pipe reducer and expander where pipe run size is different from specified flow tube size.
6. The reducer and expander shall be uniformly diverging and converging swages with a total reducing angle not exceeding 8 degrees.

Flow Tube:

1. The inside diameter of the flow tube is shown in Section 17901.
2. Available sizes: 1/10" to 64"
3. Flow tube features: measuring tube material 304 stainless steel; liner material will be Teflon-PTFE for sizes less than 1", polypropylene for 1" – 6", and hard rubber for larger than 6" flow tubes.
4. Pulsed DC field excitation with automatic zero point correction.
5. Field coil insulation class E.
6. Field replaceable electrodes replaceable when flow tube is under operating pressure.
7. Electrode material 316 Ti stainless steel, unless designated differently in Section 17901.
8. Minimum NEMA 4X protection.
9. Grounding ring material 316 Ti stainless steel, unless designated differently in Section 17901.

Transmitter:

1. Signal converter/transmitter shall be suitable for an adjustable full-scale flow within the limits of from 1 to 40 feet per second.
2. Signal converter / transmitter features: remotely mounted from flow tube; microprocessor based.
3. Bi-directional flow and totalization measurement.
4. Integral high-contrast LCD display; integral control panel (Option).
5. Accuracy of 0.3% of Rate.
6. Signal output 4 – 20 mA DC galvanically isolated and internally powered 500 ohm driving capability.
7. Low-flow cutoff.

8. Terminals and signal converter modules plug in and replaceable without recalibration or resetting and upgradeable to comply with future communication standards.
9. Adjustable dampening.
10. Power 120 VAC.
11. Minimum NEMA 4X wall mounting enclosure.
12. Flow rate calibration per Section 17901.
13. FM, UL approved.
14. Protocol: HART (Std.).
15. Protocol (optional): Profibus
16. Protocol (optional): Fieldbus

Cable:

1. Provide signal cable between the primary element and transmitter by the system manufacturer.
2. A sufficient length of cable shall be provided for installation of a continuous run between the primary element and the remotely mounted transmitter.

Note:

1. Must meet intrinsic safe area code FISCO

Instrument Identification:..... FE/FIT

Instrument Description:..... Thermal Mass Flow Measuring System

Instrument Function: ..... Gaseous Flow measurement

Power Supply:..... 120VAC (Transmitter)

Process: ..... Gas Media

Process Connection:..... Type per piping specifications; For NPT types, must have an adjustable Teflon ferrule

Product Requirements:            General: Thermal dispersion type linear mass flow meter shall consist of a single insertion type flow element with integral or remote electronics. Flow meter shall produce an output signal linear to the mass flow rate of air or gas.

1. Flow range: .75 to 600 sfps
2. Accuracy: Flow: +/-1% reading, +0.5% full scale
3. Accuracy: Temperature: +/-2°F (flow rate must be >5 FPS)
4. Repeatability: Flow: +/-0.5% of reading
5. Repeatability: Temperature: +/-1°F (flow rate must be >5 AFPS)
6. Turndown Ratio: Field adjustable from 10:1 to 100:1 within calibrated flow range
7. Temp. Compensation: +/-30°F
8. FM approved with CM Mark (EMI and RFI immunity)

Element:

1. Material of construction: All-welded 316 SS for all wetted surfaces
2. Operating Pressure & Temp: 0 to 250 psig/-40°F to 350°F
3. Op. Press. & Temp. w/ Teflon ferrule: 150 psig/200°F
4. Insertion Lengths: Field adjustable: 1"- 6", 1"-12", 1-21" or to required custom length
5. Enclosure (at element): NEMA/CSA Type 4X
6. Enclosure (at element) for Hazardous location (optional): Aluminum rated for Class I and II, Div. 1 & 2, Group B, C, D, E, F, G
7. Mounting Requirements: Minimum 20 dia. downstream and 10 dia. upstream straight run

Transmitter:

1. Operating Temperature: 0° to 140°F
2. Output Signal: 4 to 20mA, 0 to 5 Vdc, 0 to 10Vdc, 1 to 5 Vdc
3. Analog Fault Indication: Field selectable high ( $\geq 21.6\text{mA}$ ) or low ( $\leq 3.75\text{mA}$ )
4. Digital Communication Port: RS-232
5. Display (Optional): 2 lines, 16 characters/line

6. Protocol: (Option): HART and Profibus – Two way
7. Protocol (Option): Fieldbus, Ethernet, Modbus – One way, read only
8. Enclosure: Standard – NEMA/CSA Type 4X
9. Enclosure for Hazardous location (optional): Aluminum rated for Class I and II, Div. 1 & 2, Group B, C, D, E, F, G
10. Interconnecting Cable (Optional): Up to 500 ft
11. Note: 1. Must meet intrinsic safe area code FISCO

Instrument Identification:..... FS  
Instrument Description:..... Flow switch  
Instrument Function: ..... Flow measurement  
Power Supply:..... None  
Signal Input:..... Process  
Signal Output: ..... None  
Process Connection:..... ¼" FNPT  
Process:..... Gas or liquid  
Product Requirements:           General: Monitor flow level in pipelines.

## Element:

1. Paddle: Steel
2. Temperature limit: 275°F
3. Operating pressure limit: 2000 psig
4. Installation: Vertical
5. Process pipe minimum diameter: 1-1/2"
6. Process Pipe – Diameter per detail specifications
7. Min/Max pipe diameter: 1.5"/20"
8. Process velocity – Per detail specifications

## Switch:

1. Body: 316 SS
2. Approval: UL listed
3. Snap action: SPDT
4. Set point: Per detail specifications
5. Range: Per detail specifications
6. Electrical rating: 125 Vac, 10A
7. Enclosure: NEMA 7, Class I, Group C & D; Class II, Group E, F, G
8. Approval: FM
9. Wiring: 6" long, mechanically and solder bonded to switch

Instrument Identification:..... FE/FIT

Instrument Description:..... Flow Meter

Instrument Function: ..... Flow measurement

Power Supply:..... Battery powered

Signal Input:..... N/A

Signal Output(s):..... Display

Process:..... Sewer

Process Connection:..... None

Product Requirements:            General:    Portable electromagnetic flow measuring device.

Sensor:

1.    Material: Polyurethane
2.    Length: 1" or 2" – Per detail specifications
3.    Data storage/recall capability: Up to 19 data points
4.    Temperature limit: 32° to 160°F

Velocity measurement:

1.    Accuracy: +/-2% of reading
2.    Zero stability: +/-0.05 ft/s
3.    Range: -0.5 to +20 ft/s

Sensor cable:

1.    Material: Polyurethane jacketed
2.    Length: 100 ft maximum, per detail specifications

Electronics:

1.    Case: High impact molded plastic
2.    Housing: NEMA 4
3.    Temperature range: 32° to 122°F
4.    Power requirement: Two D cells, per factory standard
5.    Output: Display: 3 - 1/2 digit

Mounting Accessories:    Consult Manufacturer

Instrument Identification:..... FE/FIT  
Instrument Description:..... Flow Meter  
Instrument Function: ..... Flow measurement  
Power Supply:..... AC or DC (Per detail specifications)  
Signal Input:..... N/A  
Signal Output(s):..... See below  
Process:..... Sewer  
Process Connection:..... NPT

Product Requirements:            General:    The flow meter transmits a radar beam that interacts with the fluid and reflects back signals at a different frequency than that which was transmitted. These reflected signals are compared with the transmitted frequency. The resulting frequency shift provides an accurate measure of the velocity and the direction of the flow. The surcharge level is used when the sensor gets submerged into the media.

Sensor:

1. Enclosure: Polystyrene
2. Operating range: 14°F to 122°F

Velocity Measurement:

1. Method: Radar
2. Operating range: 0.75 to 20 ft/s
3. Accuracy: +/-0.5%; +/-0.1ft/s

Level Measurement:

1. Method: Ultrasonic
2. Operating range - Standard: 0.25 to 60" (Transducer has to be installed within this limit away from the media)
3. Operating range – Optional: 0 to 224" with 16" deadband
4. Special feature: Temperature compensated
5. Accuracy: 1%; +/-0.25"

Surcharge Level

Measurement:

1. Method: Piezo-resistive pressure transducer
2. Range – Maximum: 138"

Flow measurement:

1. Derivation: Combination of level and velocity
2. Accuracy: +/-5% of reading, excluding surcharge

Sensor cable:

1. Material: Polyurethane jacketed
2. Maximum length: 1000 feet, per detail specifications

Electronics:

1. Portable/Permanent: Per detail specifications

2. Outputs: Up to four 4-20mA, per detail specifications
3. Outputs (option): Programmable, isolated outputs capable of sinking 650 ohms each – per detail specifications
4. Contact closure (option): one form “C” dry contact
5. Housing: NEMA 4 as available
6. Material: Polystyrene
7. Operating temperature range: 14°F to 122°F
8. Display (option): Graphic – flow rate, flow totals, average velocity and level, per detail specifications
9. Data storage (option): 64K, per detail specifications
10. Set-up/data retrieval software (option): Per detail specifications

Mounting accessories: Contact manufacturer, per detail specifications

NOTE: Velocity Measurement And Level Measurement Are Standard. These Two Mechanisms Work When The Transducer Is Above Water. Once The Transducer Submerges, It Requires Surcharge Level Measurement In Order To Get The Velocity Reading. Level Reading Is Available With Or Without Surcharge Level Measurement Option.

Instrument Identification:..... FE/FIT

Instrument Description:..... Flow Meter

Instrument Function: ..... Flow measurement

Power Supply:..... AC or DC per detail specifications

Signal Input:..... N/A

Signal Output(s):..... 4-20 mA (as below)

Process:..... Sewer

Process Connection:..... None

Product Requirements:            General:    The flow meter measures velocity and level in the same cross-section, a necessary requirement for accurate flow rate measurement.

Sensor:

1. Material: Polyurethane
2. Media operating range: 32° to 113°F

Velocity measurement:

1. Method: Electromagnetic
2. Velocity range: -5 to +20 ft/s
3. Accuracy: +/-2% of reading
4. Zero stability: +/-0.05 ft/s at 0 to +10 ft/s
5. Resolution: 0.01 ft/s

Level measurement:

1. Method: Submerged pressure transducer
2. Level range: 0.4 to 138", not to have media over transducer exceeding 138" limit
3. Level range (optional): 0.4 to 276"
4. Accuracy: +/-1% of reading
5. Zero stability: +/-0.03 ft/s at 0 to +10 ft/s
6. Resolution: 0.1"
7. Over range protection: 2 X range

Flow measurement:

1. Method: Conversion of water level and pipe size
2. Accuracy (conversion): +/-5% of reading

Temp. Measurement:

1. Method: One wire digital thermometer
2. Range: 14° to 185°F
3. Accuracy: +/- 6° F

#### Sensor Cable:

1. Material: Polyurethane jacketed
2. Length: 1000 ft maximum, per detailed specifications

#### Electronics:

1. Portable/Permanent: Per detail specifications
2. Outputs: Up to four 4-20mA, per detail specifications
3. Outputs (option): Programmable, isolated outputs capable of sinking 650 ohms each – per detail specifications
4. Contact closure (option): One form “C” dry contact
5. Housing: NEMA 4 as available
6. Material: Polystyrene
7. Operating temperature range: 14°F to 122°F
8. Local terminal: RS232C at 19.2K baud
9. Data storage (option): 64K, per detail specifications
10. Set-up/data retrieval software (option): Per detail specifications

Mounting accessories: Contact manufacturer, per detail specifications

Instrument Identification:..... LT

Instrument Description:..... Level transmitter

Instrument Function: ..... Level measurement (Ultrasonic)

Power Supply:..... 120VAC

Signal Input:..... N/A

Signal Output: ..... 4-20 mA and relay outputs (as below)

Process Connections:..... 1" NPT standard or (1" NPT, PTFE facing for flanged versions)

Product Requirements:           The ultrasonic assembly is made of a transducer and a transmitter, connected by a cable. The transducer is to be mounted on top of the liquid level per installation instructions. Transducer does not provide an accurate reading within 12" of liquid.

Transducer:

1. Approval: FM approved.
2. Area classification: Class 1, Div. 1
3. Temperature limit: -40 to 230°F
4. Body material: Kynar
5. Process connections: Per detail specifications

Cable:

1. Length limit: 365 meters (Factory plus special cable; length must not exceed this number)
2. Factory cable: 100 meters maximum
3. Special cable: Coaxial, RG62-A/U as required if detail specifications exceed 100 meters length

Transmitter:

1. Mount: Wall or rack/panel
2. Approval: FM general purpose
3. Area classification: Class 1, Div. 2
4. Enclosure: NEMA 4X  
Monitoring range: 1 to 50 ft
5. Accuracy: 0.25% of range or 0.24", whichever is greater
6. Resolution: 0.1% of range or 0.08", whichever is greater
7. Temperature limit: -5 to 122°F
8. Display: LCD
9. Temperature compensation: -58 to 302°F
10. Relay outputs: 5 alarm/control relays, 1 form 'C' SPDT contact per relay, rated 5A at 250 Vac non-inductive
11. Area classification: Class 1, Div. 2, Group A, B, C, D; Class II, Div. 2, Group F and G
12. Calibration: Capable of re-starting after power failure

Options: (as req'd)

1. Submergence shield kit
2. Channel bracket, extended channel bracket, universal box bracket, mounting kit as required per detail specifications
3. Hand programmer
4. Other means of programming
5. Tags

Instrument Identification:..... LT  
Instrument Description:..... Level Transmitter  
Instrument Function: ..... Measure level  
Power Supply:..... None  
Signal Input:..... Process  
Signal Output: ..... 4-20mA  
Process:..... Waste water  
Process Connection:..... ¾" MNPT

Product Requirements:

Sensor:

1. Probe: Standard rigid, 5/8" OD
2. Material: 316 SS
3. Insertion: ¾" Sch 40 or 80 sensor well
4. Operating temperature: -40 to 250°F
5. Maximum pressure: 1800 psig @ 300°F
6. Measuring Range: 1 to 75 feet – Per detail specifications
7. Approval: FM

Transmitter:

1. Housing: Explosion proof, stainless steel
2. Electrical connection: ½" FNPT
3. Repeatability: 0.005% of full scale or 0.015", whichever is greater
4. Non-Linearity: 0.01% of full scale or 0.035", whichever is greater
5. Accuracy: 0.01% of full scale or 0.050", whichever is greater
6. Loop supplied voltage: 13.5 to 36DVC
7. Burnout: Jumper selectable upscale or downscale
8. Temperature limit: -40 to 170°F
9. Humidity: 0 to 100% RH, non-condensing
10. Module: Field replaceable
11. Display: LCD

Options: All options per detail specifications

1. Hart Protocol
2. Foundation Field Bus
3. Honeywell DE output
4. Two level output – If there is a mixed media
5. Temperature output
6. Remote indicator if LCD too far up to read

Note:

1. Must meet intrinsic safe area code FISCO

Instrument Identification:..... LT  
Instrument Description:..... Level Transmitter  
Instrument Function: ..... Level measurement  
Power Supply:..... N/A  
Signal Input:..... N/A  
Signal Output: ..... 4-20 mA with Digital Signal Based on HART protocol or Foundation field-bus  
– As specified  
Process Connection:..... High pressure side: 3" ANSI Class 150# flange mount, SST Low Pressure  
side: 1/2-inch female NPT (Flange adapters as required)

Product Requirements:

1. Level transmitter shall be capacitance type.
2. Unless otherwise specified, wetted parts shall be ASTM A276, type 316 stainless steel.
3. Rangeability of 100:1
4. Accuracy shall be 0.075% of calibrated range.
5. Transmitters shall be available in various ranges from -250"H<sub>2</sub>O to 300 psi range. Specific ranges shall be per detail specifications.
6. Transmitters shall be provided with 1/2-inch process connection and one 1/4-inch drain/vent port.
7. Static pressure maximum rating shall be 275 psig.
8. Shall have FM Explosion proof approval.
9. Indicator: LCD display.
10. Mounting: Flange type.

Seals:

1. Type: Diaphragm, ANSI/ASME B16.5 standard
2. High side diaphragm and flange: 316L SST
3. Low side flange and adapter: 316 SST
4. Temperature limit – High side: -40 to 400°F
5. Process connection: 3", Class 150, flanged,

Flush surface

Process temperature above 185°F require derating the ambient limits by 1.5:1 ratio

Capillary option:

1. Seal location: High pressure side of transmitter, direct mounting
2. Fill fluid: D.C. 200 Silicone
3. Capillary seal connection material: 316 SST armored sleeving
4. Capillary length: Per detailed specifications

Note:

1. Must meet intrinsic safe area code FISCO

Instrument Identification:..... LT

Instrument Description:..... Level gauge

Instrument Function: ..... Level measurement

Power Supply:..... N/A

Signal Input:..... N/A

Signal Output: ..... 4-20 mA

Process:..... Water and wastewater (Not for chemicals)

Process Connections:..... 1-1/2" MNPT

Product Requirements:            General:    Aquatape level gauge is a packaged system for monitoring level in water and water-based non-corrosive materials.    Aquatape system consists of: resistance-tape sensor, a compact filter assembly, sensor housing, and two-wire 4-20mA current transmitter.

Aquatape sensor is installed into a King County provided vented still pipe with a minimum diameter of 1.5".

Sensor:

1. Sensor housing: PVC type
2. Sensor housing mount: 1-1/2" MNPT
3. Sensor length limit: 3 to 50 feet
4. Sensor length: Per detailed specifications
5. Sensor Housing: PVC, 6"X6"X6"
6. Operating temperature limit: 5 to 140°F
7. Wetted material: Polyester
8. Actuation depth: Nominal 5" head of water, offset at calibration.
9. Accuracy: 1 to 2 cm
10. Specific gravity effect: 1% increase equals 0.04" increase in indicated level
11. FM approved.

Sensor Installation:

1. Still pipe: Length per detailed specifications. Sensor filter:
2. Polypropylene and neoprene construction.

Current transmitter:

1. Two-wire type, mounted into sensor housing
2. Span and zero adjustment: By internal DIP switches and potentiometers.
3. Stability: +/-0.005% per °F

Instrument Identification:..... LT

Instrument Description:..... Level gauge

Instrument Function: ..... Level measurement

Power Supply:..... N/A

Signal Input:..... N/A

Signal Output: ..... 4-20 mA

Process:..... Various chemicals (May not be suited for some chemicals, caustics, or high vapor pressure materials)

Process Connections:..... 3" 150lb flange

Product Requirements:            General:    Chemtape level gauge is a packaged system for monitoring level in chemicals. Chemtape system consists of: resistance-tape sensor, a compact filter assembly, sensor housing, and two wire 4-20mA current transmitter.

Chemtape sensor is installed into a King County provided vented still pipe with a minimum diameter of 1.5".

Sensor:

1. Sensor length limit: 3 to 100 feet.
2. Sensor length: Per detailed specifications
3. Sensor Housing: 304 SS, 8"X8"X7"
4. Sensor housing mount: 3" 150lb flange
5. Operating temperature range (Teflon model): 5 to 180°F
6. Wetted material: Hastelloy C276 or per detailed specifications
7. Actuation depth: Nominal 5" head of water, offset at calibration.
8. Specific gravity effect: 1% increase equals nominal 1mm increase in indicated level
9. Accuracy: 1 to 2 cm
10. Barriers: Must be FM approved.
11. FM approved.

Sensor installation:

1. Still pipe: Per detailed specifications.

Sensor filter:

1. Polypropylene and viton.

Current transmitter:

1. Two-wire type, mounted into sensor housing
2. Stability: +/-0.005% per °C

Instrument Identification:..... SIT  
Instrument Description:..... Speed Transmitter  
Instrument Function: ..... Measure Speed  
Power Supply:..... 120 Vac  
Signal Input:..... Pulse frequency from the sensor  
Signal Output: ..... 4-20mA  
Process:..... Wastewater  
Process Connection:..... N/A

Product Requirements:

Sensor:

1. Type: Active - Magnetic hall effect
2. Power supply: 4.5 – 24 Vdc, provided by the transmitter
3. Output: Square wave fan out to 10 TTL inputs
4. Reverse battery voltage: -30 Vdc
5. Target frequency: 0 to 15 KHZ
6. Operating temperature: -40 to 257°F
7. Humidity: 92%RH at 104°F
8. Housing material: 300 series SS

Transmitter:

1. Channel: Dual
2. Frequency input limit: 2 to 30K Hz
3. Temperature: 0 to 122°F
4. Humidity: 90% relative and non-condensing
5. Display: 4-½ digit with minus sign and decimals; fixed or floating decimal
6. Output: 4-20mA
7. Output: Serial digital RS232C
8. Relay contacts: 2 SPDT, 6A at 28 Vdc or 240 Vac
9. Accuracy: Digital: +/-0.03% typical
10. Accuracy: Analog: +/-0.3% of range
11. Response time: Display: Updated about every ½ sec.
12. Enclosure: NEMA 1, 4X, 7 or 9 per detail specifications

Instrument Identification:..... ZT  
Instrument Description:..... Position Transmitter  
Instrument Function: ..... Measure gate travel  
Power Supply:..... 24Vdc  
Signal Input:..... None  
Signal Output: ..... 4-20mA  
Process:..... Waste water  
Process Connection:..... None

Product Requirements:

Sensor:

1. Style: Rod
2. Measured variable: Velocity
3. Measuring range: 2 to 300 inches
4. Minimum velocity: 1.0in/s or 0.05 X stroke length inches, whichever is greater
5. Maximum velocity: 400 in/s or 100 X stroke length in inches, whichever is greater
6. Operating temperature: -40 to 221°F
7. Flange: 304L SS

Electronics:

1. Non-linearity:  $\leq \pm 0.02\%$  of full stroke or  $\pm 0.05\text{mm}$ , whichever is greater
2. Repeatability:  $\leq \pm 0.001\%$  of full scale or  $\pm 0.0025\text{ mm}$ , whichever is greater
3. Adjustment of zero & span: 100% field adjustment of measuring range
4. Update time:  $\leq$  or  $=$  to 1 ms typical
5. Electronic housing: Aluminum die-cast
6. Operating pressure: 5000 psi
7. Magnet: type: Ring
8. Protocol (option): Profibus, DeviceNet

Option:

1. Explosion proof housing
2. Integral cable or 6-pin connector per detail specifications

Note: If integral cable is specified, factory connects the cable to electronics. If connector is specified, King County connects the cable to electronics.

Instrument Identification:..... FS

Instrument Description:..... Flow switch

Instrument Function: ..... Flow measurement

Power Supply:..... 120 Vac

Signal Input:..... N/A

Signal Output: ..... None

Process Connection:..... 1" NPT

Process:..... Air/Gas/liquid

Product Requirements:            General:    Thermal Dispersion technology in which the temperature difference is greatest in a no-flow condition and decreases as flow increases, cooling the heated RTD. Changes in flow velocity directly affect the extent to which heat dissipates and, in turn, the magnitude of the temperature difference between the RTDs.

Element:

1.    Material: Welded 316L SS
2.    Insertion length: 2" or 6" - Per detail specifications
3.    Operating temperature: -40 to 250°F
4.    Operating pressure: 0 to 500 psig

Switch:

1.    Set point range: Depend upon type of media, per detail specifications
2.    Repeatability: +/-1% of range.
3.    Response time: Depend upon media, per detail specifications
4.    Enclosure: NEMA 4, Class 1, Division 1, Groups B, C, D; Class 2, Division 2, Groups E to G
5.    Approval: FM
6.    Operating temperature: 0 to 140°F
7.    Snap action: SPDT
8.    Output: 6A relay contact
9.    Electrical connection: ¾" FNPT
10.   Set point: Field settable
11.   Thermal compensation: Integral to the unit

Instrument Identification:..... LS

Instrument Description:..... Level switch

Instrument Function: ..... Level measurement

Power Supply:..... 120 Vac

Signal Input:..... Process

Signal Output: ..... Relay contact

Process Connection:..... 1" NPT

Product Requirements:                    General:    An integral unit assembly which senses liquid presence by ultrasonic techniques, regardless of changes in material's physical properties, including density.

Element:

1.    Wetted material: 316SS
2.    Operating point: 3/8" from tip
3.    Pressure limit: 50 PSI
4.    Temperature limit: 250°F
5.    Insertion length: Adjustable 2-3/8" to 36", as specified in detail specifications

Switch:

1.    Snap action: DPDT relay
2.    Contact rating: 4.4A 120Vac inductive
3.    Operating temperature: -40 to 160°F
4.    Fail safe: Hi or low, field selectable
5.    Response time: 2 sec.
6.    Housing: NEMA 4X, Class I, Div. 1 or 2, groups A to D; Class II, Div. 1 or 2
7.    Approval: FM

Option:

1.    Auto verify circuitry

Instrument Identification:..... LS

Instrument Description:..... Level switch

Instrument Function: ..... Level measurement

Power Supply:..... 120VAC

Signal Input:..... N/A

Signal Output: ..... None

Process Connection:..... None

Product Requirements:                    General:    Directly monitor liquid level and switch a contact when liquid level exceeds set point level.

Switch:

1. Type: Mercury, hermetically sealed
2. Operation: ON to OFF and OFF to ON
3. Actuation: Longitudinal axis goes horizontal
4. Deactuation: Liquid level 1" below set level
5. Operating temperature: 0 to 122°F
6. Float size: 4.5" maximum diameter by 6" long
7. Float material: Polypropylene
8. Set point: Per detail specifications
9. Contact action: SPDT
10. Contact rating: 115V @ 4.5A
11. Rating: 6P, class 1, division 1

Mounting:

1. Pipe mount or suspended: Per detail specifications

Cable:

1. Type: PVC, 2 - #18AWG 41 strand 600v, 60°C
2. Length available: Per detailed specifications

Option:

1. Junction box: Per detailed specifications

Instrument Identification:..... PDI  
Instrument Description:..... Differential Pressure Gauge  
Instrument Function: ..... Differential Pressure Measurement  
Power Supply:..... None  
Process:..... Air and non-combustible compatible gases  
Process Connection:..... 1/8" FNPT (Two pairs – One side pair and one back pair for multiple style mounting)

Product Requirements:

1. Size: 4" dial
2. Scale: 270 degrees
3. Scale Range: Per detailed specifications
4. Wetted material: Factory Standard
5. Housing: Die cast aluminum case and bezel, with acrylic cover
6. Accuracy: +/-2% of full scale (+/-3% on – 0 and +/-4% on – 00 ranges), throughout range at 70°F
7. Operating pressure limit (std.): -20"Hg to 15 psig
8. Operating pressure limit (option): Medium pressure – 35 psig, High pressure – 80 psig
9. Overpressure protection (std. only): Relief plug opens at approximately 25 psig
10. Temperature limit: 20° to 140°F
11. Mounting orientation: Diaphragm in vertical position; mounting to be modified per specific requirements
12. Mounting: Flush, surface or pipe

Accessories:

1. Transparent overlays (Optional): Furnished in red and green to highlight and emphasize critical pressure
2. Adjustable signal flag (indication for set point): Available only for standard range gauge. Not available for medium or high range gauges.

Instrument Identification:..... PI

Instrument Description:..... Low range pressure gauge

Instrument Function: ..... Low pressure measurement

Power Supply:..... None

Process:..... Waste water and air

Process Connection:..... NPT, per detail specifications

Product Requirements:

1. Size: 4.5" dial
2. Case material finish: Phenolic black
3. Scale: 270 degrees
3. Accuracy: Factory standard
4. Bellows: 316 SS
5. Socket Material: 316 SS
6. Range: Per detail specifications
7. Connection location: Lower or Back - Per detail specifications
8. Mounting: Stem, Flush, Surface - Per detail specifications
9. Window: Glass

Options:

1. Silicone fill, Hermetically seal, Flush mounting ring, Shatterproof glass, Acrylic window – Per detail specifications

Instrument Identification:..... PI  
Instrument Description:..... Pressure Gauge  
Instrument Function: ..... Pressure Measurement  
Power Supply:..... None  
Process:..... Waste water and air  
Process Connection:..... NPT, per detail specifications

Product Requirements:

1. Size: 4.5" dial
2. Case material finish: Phenolic black
3. Scale: 270 degrees
4. Accuracy: ½% full scale
5. Bourdon tube: 316L SS
6. Socket Material: 316L SS
7. Range: Per detail specifications
8. Connection location: Lower or Back - Per detail specifications
9. Mounting: Stem, Flush, Surface - Per detail specifications
10. Window: Glass

Options:

1. Silicone fill, Hermetically seal, Flush mounting ring, Shatterproof glass, Acrylic window – PER DETAIL SPECIFICATIONS

Instrument Identification:..... PDS

Instrument Description:..... Low differential pressure switch

Instrument Function: ..... Low differential pressure measurement

Power Supply:..... None

Signal Input:..... Process

Signal Output: ..... None

Process Connection:..... 1/8" FNPT

Process:..... Air/Gas

Product Requirements:                      General:    Monitor low differential pressure and provide contact closure when differential pressure is at the noted set point.

Element:

1.    Wetted material: Factory standard
2.    Temperature limit: -40 to 140°F
3.    Pressure limit: Per selected range
4.    Deadband: Fixed

Switch:

1.    Approval: UL, FM
2.    Snap action: SPDT
3.    Set point: Per detail specifications
4.    Adjustable range: Per detail specifications
5.    Range: 0.5 to 50 PSID
6.    Electrical rating: 15A at 125Vac
7.    Electrical connections: Screw type
8.    Mounting: Diaphragm: Vertical
9.    Enclosure: NEMA 7 or not per detail specifications

Instrument Identification:..... PS

Instrument Description:..... Pressure switch

Instrument Function:            Pressure measurement

Power Supply:                None

Signal Input:                N/A

Signal Output:              None

Process Connection:        ½" FNPT

Product Requirements:        General:    Monitor pressure for general purpose and provide contact closure  
when pressure is at the noted set point.

Element:

1.    Type: Pressure control, single set point, fixed deadband
2.    Material: Stainless steel
3.    Wetted material: Per manufacturer standards
4.    Pressure connection material: 316L SS
5.    Process temp. limit: Per detail specifications

Switch:

1.    Approval: UL listed
2.    Burst pressure: 400% of nominal range
3.    Snap action: SPDT, hermetically sealed
4.    Accuracy: 1% of nominal range
5.    Repeatability: 1% of nominal range
6.    Set point: Per detail specifications
7.    Range: Per detail specifications
8.    Rating: 125 Vac, 11A
9.    Reset: Automatic
10.   Enclosure: NEMA 4X

Instrument Identification:..... TS

Instrument Description:..... Temperature switch

Instrument Function: ..... Temperature measurement

Power Supply:..... None

Signal Input:..... N/A

Signal Output: ..... None

Process Connection:..... ¾" NPT

Product Requirements:                    General:    Monitor temperature for general purpose and provide contact closure when temperature is at the noted set point.

Element:

1.    Type: Bulb
2.    Connection: ½" FNPT
3.    Material: Stainless steel
4.    Insertion bulb length: 3" for remote mount
5.    Insertion bulb length: Varies, per pipe size, per detailed specifications
6.    Mounting: Remote/Direct – Per detailed specifications

Capillary:

1.    Length available: Per detailed specifications

Thermowell:

1.    Mounting: Remote or direct, per detailed specifications
2.    Process connection: ¾" NPT
3.    Material: Stainless steel
4.    Bore: 3/8", solid
5.    Insertion length: Per detailed specifications

Switch:

1.    Approval: UL listed
2.    Burst pressure: 400% of nominal range
3.    Snap action: SPDT, hermetically sealed
4.    Accuracy: 1% of nominal range
5.    Repeatability: 1% of nominal range
6.    Set point: Per detail specifications
7.    Range: Per detail specifications
8.    Rating: 125 Vac, 15A
9.    Deadband: Factory standard
10.   Reset: Automatic
11.   Enclosure: NEMA 7, explosion proof, Divisions 1 and 2, Groups C & D

Instrument Identification:..... PDS

Instrument Description:..... Low differential pressure switch

Instrument Function: ..... Low differential pressure measurement

Power Supply:..... None

Signal Input:..... Process

Signal Output: ..... None

Process Connection:..... 1/8" FNPT

Process:..... Liquid

Product Requirements:                      General:    Monitor low differential pressure and provide contact closure when differential pressure is at the noted set point.

Element:

1.    Wetted material: 316 SS
2.    Diaphragm: Viton
3.    Temperature limit: 220°F
4.    Pressure limit: 1500 psig
5.    Deadband: Fixed

Switch:

1.    Approval: UL
2.    Snap action: SPDT
3.    Set point: Per detail specifications
4.    Adjustable range: Per detail specifications
5.    Range available: 10"WC to 200 PSID
6.    Reset: Automatic
7.    Electrical rating: 5A at 125Vac
8.    Conduit connection: 3/4" FNPT
9.    Mounting orientation: Vertical
10.   Enclosure: Explosion proof, Class I, Division 1, Groups B to D; Class II, Division 1, Groups E, F, G

Options:

1.    Housing with drain – Allows condensate to be drained from inside enclosure
2.    Gold contacts on snap switch for dry circuits rated 1A at 125Vac, 1A resistive or 0.5A inductive at 30VDC

Process Connection:..... 1/2" FNPT

Product Requirements:	General: Monitor differential pressure for general purpose and provide contact closure when differential pressure is at the noted set point.
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Element:

1. Type: Differential pressure control, single set point, fixed deadband
2. Material: Stainless steel
3. Wetted material: Per manufacturer standards
4. Pressure connection material: Nickel-plated brass
5. Process temp. limit: Per detail specifications

Switch:

1. Approval: UL listed
2. Burst pressure: 400% of nominal range
3. Snap action: SPDT, hermetically sealed
4. Accuracy: 1% of nominal range
5. Repeatability: 1% of nominal range
6. Set point: Per detail specifications
7. Range: Per detail specifications
8. Rating: 125 Vac, 11A
9. Reset: Automatic
10. Enclosure: NEMA 4X

Instrument Identification:..... PS

Instrument Description:..... Low pressure switch

Instrument Function: ..... Low pressure measurement

Power Supply:..... None

Signal Input:..... Process

Signal Output: ..... None

Process Connection:..... ¼" FNPT

Process:..... Gas or liquid

Product Requirements:                    General:    Monitor low pressure and provide contact closure when pressure is at the noted set point.

Element:

1.    Wetted parts: Gas: Nylon reinforced Buna-N, steel
2.    Wetted parts: Liquid: Teflon, 316SS
3.    Temperature limit: -30 to 150°F
4.    Pressure limit: Per selected range
5.    Deadband: Fixed

Switch:

1.    Approval: UL listed
2.    Type: SPDT
3.    Repeatability: +/-1% of full scale
4.    Set point: Per detail specifications
5.    Adjustable range: Per detail specifications
6.    Electrical rating: Mercury: 4A at 120Vac, hermetically sealed
7.    Electrical rating: Snap: 15A at 120Vac
8.    Electrical connections: Screw terminal
9.    Mounting: Mercury: Vertical
10.   Mounting: Any position for snap switch
11.   Enclosure: NEMA 7, Class I, Group C & D; Class II, Group E, F, G

Instrument Identification:..... VS  
Instrument Description:..... Vibration switch  
Instrument Function: ..... Motor or pump vibration monitor  
Power Supply:..... 120 Vac, 50/60 Hz  
Signal Input:..... Acceleration or velocity  
Signal Output: ..... Relay alarms and 4-20 mADC  
Process Connection:..... N/A

Product Requirements:            General:    The vibration switch shall be a malfunction detector consisting of an acceleration/velocity sensitive electronic instrument intended to protect rotating machinery from damage due to mechanical malfunction and vibration.

Element:

1. Measuring mode: Velocity or acceleration – field selectable
2. Operating temperature range: -40 to 176°F
3. Humidity: 95% RH at 100°F
4. Housing approval: FM
5. Housing: Explosion proof for Class I, Div. 1, Groups C & D; Class II, Div. 1, Groups E, F, & G
6. Housing: For remote mount: Explosion proof for Class 1, Div. 1, Groups B, C, and D; Class II, Div. 1, Groups E, F, and G
7. Input signal: Velocity: Low Range: 0 – 1.5"/sec. RMS; High Range: 0 – 3"/sec. RMS
8. Input signal: Acceleration: Low Range: 0 – 5 G's RMS; High Range: 0 – 10 G's RMS
9. Output signal: 4 – 20mADC, 750 ohms maximum
10. Relays: Two: 2 amp at 120/240VAC
11. Time Delay: Field adjustable 0.5 to 15 seconds (for one alarm only)
12. Accuracy: Relay set point: +/-10% of setting with a repeatability of 2%
13. Analog output: +/-5% of span
14. Supply and load variation: Less than +0.1
15. Frequency response: Flat response 8 Hz to 1KHz
16. Alarm condition indicators: LED set points
17. Alarm reset: Automatic

Option:

1. Remote mounted sensor
2. Cable: Limit 1000 ft, ungrounded twisted pair provided by King County

Instrument Identification:..... YVC

Instrument Description:..... Isolator

Instrument Function: ..... To isolate and/or convert signal

Power Supply:..... 115 VAC, +/- 10%, 50/60 Hz, 2.5W max. With option for 9-30VDC

Signal Input:..... N/A

Signal Output: ..... N/A

Process Connection:..... None

Product Requirements:

1. Input Ranges:
  - Minimum: 0 to 1 VDC
  - Maximum: 0 to 200 VDC
  - Maximum Bipolar Voltage: +/-200 VDC
2. Input Impedance: 1 Mega ohms minimum
3. Output Ranges:
  - Minimum: 0 to 1 VDC
  - Maximum: 0 to 10 VDC
  - Bipolar Voltage: Min: +/-1VDC, Max: +/- 10 DVC
  - Current: Min: 0 to 2 mADC
  - Current: Max: 0 to 20 mADC
  - Load factor: 1000 ohm @ 20mA
4. Output zero and span: Multi-turn potentiometers to compensate for load and lead variations; +/-15% of span adjustment range
5. Output Linearity: Better than +/- 0.1% of span
6. Output ripple and noise: <10 mV (rms)
7. Response time: Typical: 100 mS
8. Temp range operating: -10°C to +60°C
9. Loop trackers: LEDs
10. Pushbutton: Functional test
11. Socket: Industrial standard 8-pin octal, finger safe

Instrument Identification:..... xl  
Instrument Description:..... Bar Graph  
Instrument Function: ..... Process measurement  
Power Supply:..... 120Vac  
Signal Input:..... N/A  
Signal Output: ..... None  
Process:..... Wastewater or any other liquid  
Process Connections:..... Panel mount

Product Requirements:

1. Segments: 101
2. Resolution: 1.0%
3. Enclosure material: Non-glare black Noryl or factory standard
4. Digital display option: True minus sign
5. Number of digits: 4
6. Line regulation: +/-10%
7. Operating temperature range: 0 to 140°F
8. Input: 1-5 VDC
9. Color: Red

Set point option:

1. Standard set points: Lo and Hi
2. Relay contact rating: (Three from C) 2A at 30Vdc

Instrument Identification:..... UR  
Instrument Description:..... 140mm paperless recorder  
Instrument Function: ..... Multi-channel panel recorder  
Power Supply:..... 120 VAC, 60 hertz  
Signal Input:..... Universal up to 16 – 4 to 20mA  
Signal Output: ..... N/A  
Process Connection:..... N/A

Product Requirements:

1. General: Electronic data recording and trend display.
2. Enclosure: 100 mm DIN format size, NEMA 4 front panel
3. Inputs: 6 universal analog inputs. 0 - 5 VDC, 0 - 20 mA DC
4. Scan rate: 20 ms
5. Display: 5.5" color active matrix LCD providing wide viewing angles and bright easy to read displays for one to all configured channels.
6. Memory: 4 Mb RAM, 1.44 Mb removable disk, EEPROM configuration
7. Operator interface: Menu-based for configuration, reset, and data acquisition
8. Options: Ethernet port

Instrument Identification:..... KI

Instrument Description:..... Indicator

Instrument Function: ..... Indication

Power Supply:..... 120 Vac

Signal Input:..... N/A

Signal Output: ..... 4-20 mA, 0/5 Vdc, 0/10 Vdc, 1/5 Vdc

Process Connection:..... None

Product Requirements:


1. Operating temperature: 32 to 122°F
2. Display: 4-digit, red or green LED
3. Display range: -1999 to 9999
4. Relative humidity: 95% at 104°F, non-condensing
5. Connections: Screw terminals
6. Front keypad: Lockable

Accessories: As specified per detail specifications

1. NEMA-4 splash-proof lens with screw clamp
2. NEMA-4 splash-proof lens with spring clip
3. Removable buttonless bezel

# BID OPENING LABEL

Complete the form below (or a reasonable facsimile thereof) and affix to the exterior lower left hand corner of the submission package.

<b>U R G E N T – SEALED BID ENCLOSED</b> <b>Do Not Delay – Deliver Immediately</b>	
<b>U R G E N T</b>	 <b>King County</b> King County Procurement & Contract Services Section Exchange Building, 8 <sup>th</sup> Floor 821 2nd Ave., EXC-FI-0862 Seattle, WA 98104-1598
	<b>Bid No.</b> ITB 05-017 JAE
	<b>Bid Title</b> DNR Field Instrument Standardization
	<b>Due Date</b>
	<b>Vendor</b>
<b>U R G E N T</b>	